Buying a bike? See the special section inside

# meccano magazine

November

1s.6d.

the practical boy's hobbies magazine

1964

*IN THIS ISSUE*

- Build a transistor radio
- Plans for a control line model aircraft

ANOTHER
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PRODUCT

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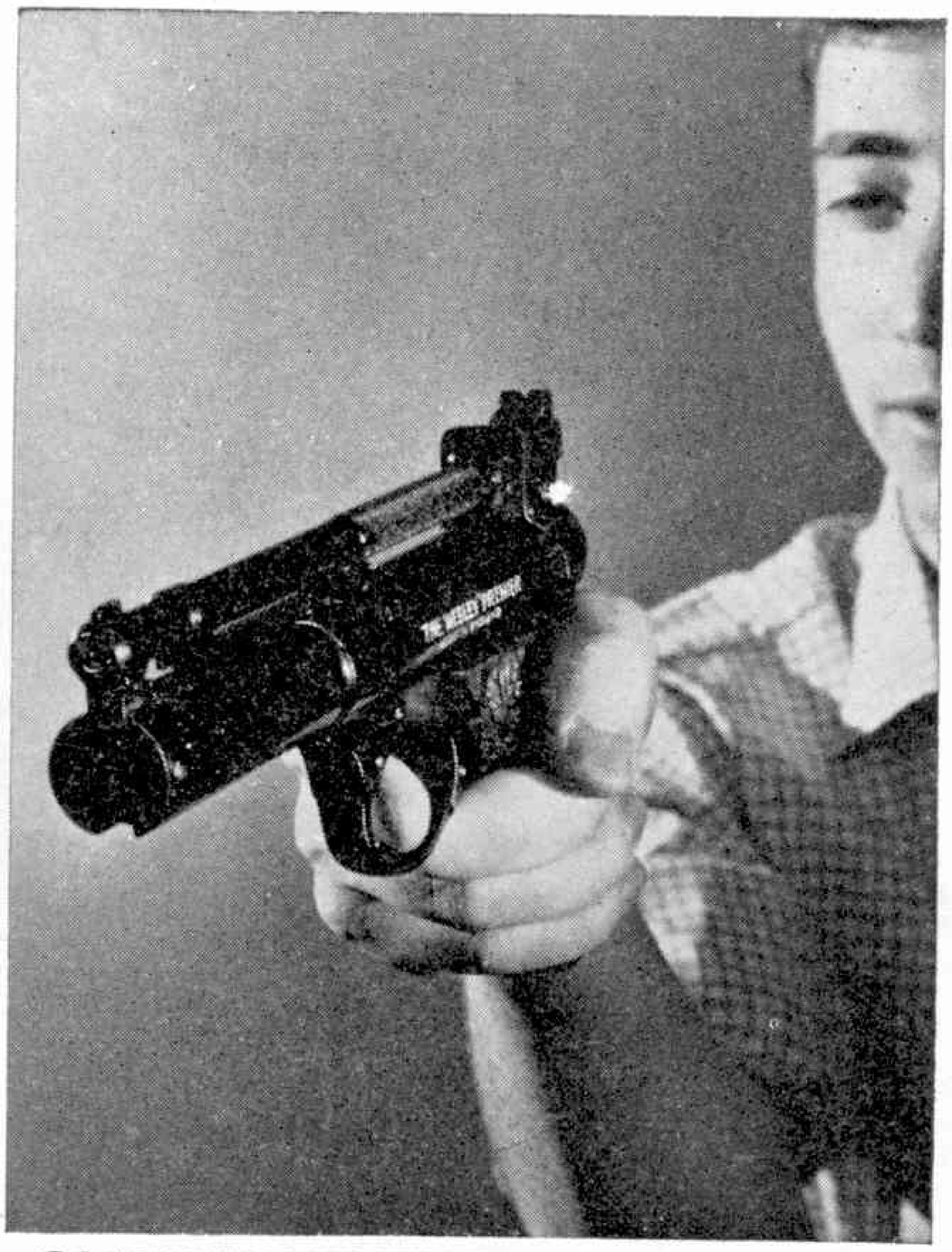

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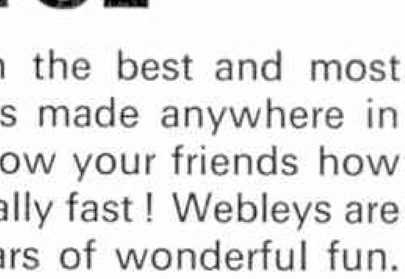

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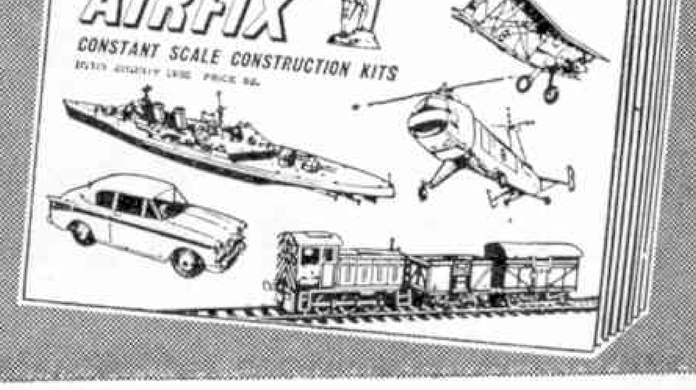

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meccano magazine
# the PRACTICAL BOY'S HOBBIES MAGAZINE

**November 1964 ■ Vol. 49 ■ No. 9 ■ Published monthly**

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**Cover picture:**
*Build your own transistor radio! This cover photo shows the actual unit being built by one of M.M.'s readers. This radio is featured on page 22.*

### Ordering the Meccano Magazine overseas

Readers overseas can order the *Meccano Magazine* from Meccano dealers or direct from the publishers. The subscription rate for 12 months is the equivalent of 20/- sterling at the current rate of exchange.

# Bikes, Radios and 'Planes

WHETHER you are interested in cycling, radio electronics or building model aircraft, this month's issue of Meccano Magazine contains something special for you! An eight page section is devoted entirely to buying and maintaining a bicycle and whether you own a machine or are intending to buy one, you will find this special feature very interesting.

While on the subject of cycling, you will be able to see many of the models featured on the cycling pages at the forthcoming Cycle and Motor Cycle Show which is to be held at Earls Court, London, from the 14th to 21st November. Make a note of this date and get your mother or father to take you along to see this grand display of all the latest and greatest cycles and motor cycles for 1965.

### Another Exhibition

Transistors have completely revolutionised the world of radio electronics in that they have made possible the miniaturisation of a whole range of electrical equipment from everyday tape recorders and radios to the complicated radio equipment fitted inside the space age rockets.

Some of the many applications of transistors may be seen at the International Radio Communications Exhibition which takes place on the 28th to 31st of October at Seymour Hall, Seymour Place, London, W.1. On display will be a complete radio communications room from an aircraft carrier, plus Army, Air Force and G.P.O. modern communications technical equipment.

The show should prove extremely interesting and if you are keen on amateur radio broadcasting, it is a show you must not miss. Radio electronics is a very absorbing hobby and if you want to learn about this 'modern' pastime, take a look at page 22 of this issue. There you will find full instructions on how to build a transistor radio set. Even the most inexperienced amateur can follow the step-by-step instructions given by our radio electronics expert Mr. F. Judd, A.Inst.E. Over the next few months, Mr. Judd hopes to be able to teach the basic lessons in radio electronics, finishing at the stage where you will be able to build your own record player.

**The Editor**

## PHOTO COMPETITION WINNERS

Last month, we announced that the prizewinners of the Meccano Magazine Photo Competition would be featured in this issue. Unfortunately, we haven't room to print the prize-winning photographs in this issue, but will feature them next month. All winners of main and consolation prizes will be receiving their awards shortly and here is a list of the major prize winners who will each receive Kodak Instamatic Cameras:—

| | PEOPLE | PETS | PLACES |
|---|---|---|---|
| **1st prizes:** | R. Waterworth,<br>142 Broad Lane,<br>Coventry,<br>Warks. | J. Rushen, "Wayside",<br>Shropham,<br>Attleborough,<br>Norfolk. | S. J. Dewdney<br>47 Caversham Avenue,<br>Palmers Green,<br>London, N.13. |
| **2nd prizes:** | Brian Selby,<br>1 Police House,<br>Garth Road, Trealaw,<br>Rhondda, Glams. | P. Mackenzie,<br>95 Manthorpe Road,<br>Grantham,<br>Lincs. | R. N. Illingworth<br>8 Harley Road,<br>Sheffield, 11. |
| **3rd prizes:** | T. Henderson,<br>61 Arthur Street,<br>Alfreton,<br>Derby. | J. Turner<br>51 Langdown Road,<br>Hythe,<br>Hants. | K. Parsons,<br>3 Farthings Close,<br>Nynehead,<br>Wellington, Somerset. |

# THE BUILDING OF BENMORE DAM

IN any country, town or even village, a crowd will quickly collect at the sight of workmen digging a hole. Thus, it is easy to understand that since work commenced on the Benmore Dam scheme in New Zealand more than 300,000 people have viewed the project.

Not only is this the largest public works in the country, but it also outstrips any other place for public and tourist interest. People from the nearby towns have visited Benmore many times and it has attracted travellers to the Southern Lakes to use the route. Bus loads of tourists going to the lakes and queues of cars have climbed the highway past the foundations for the turbine house and water intake.

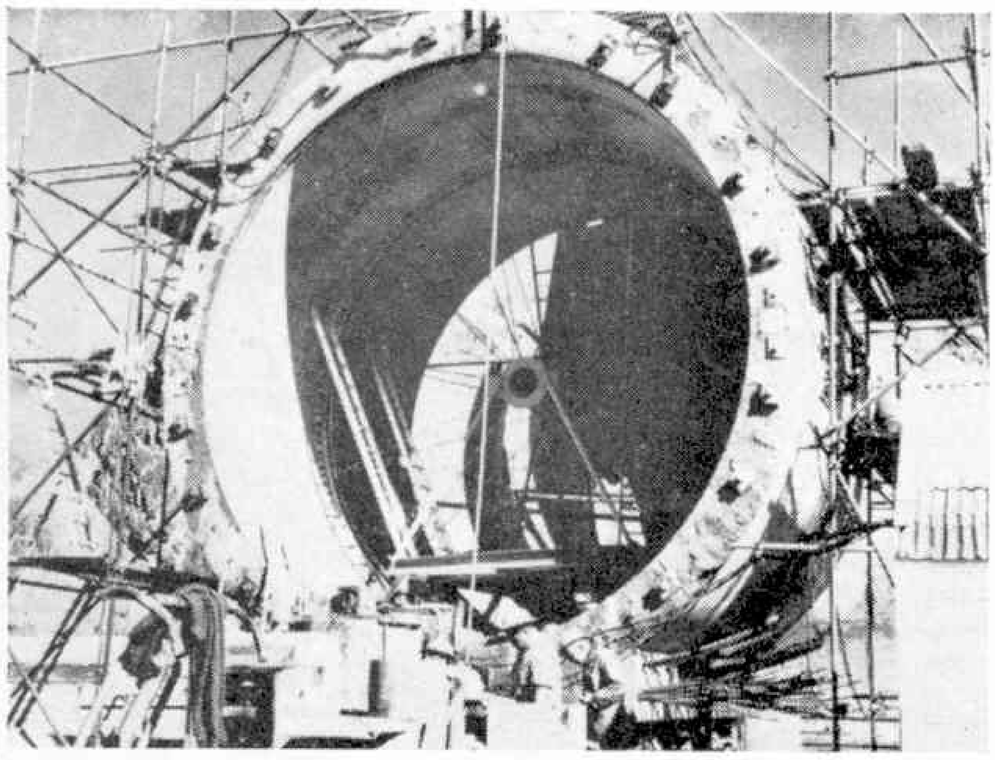
An office set up by the Tourist and Publicity Department for the project, at the request of the Ministry of Works, designed a special lookout from which the whole vast undertaking can be surveyed. It contains progress photographs and a model of the dam. A staff of three explain the work to the visitors. On one hectic day it was estimated that 12,000 people filed through the lookout.

Visitors can watch the earth-moving fleet of machines climb the mounting slope to the crest of the dam. All day they add their loads of spoil from pits in the Waitaki River bed with ant-like patience and persistence. Their daily additions seem imperceptible, but each month it has grown by another 500,000 cubic yards, each time adding 50 feet to the height of the dam.

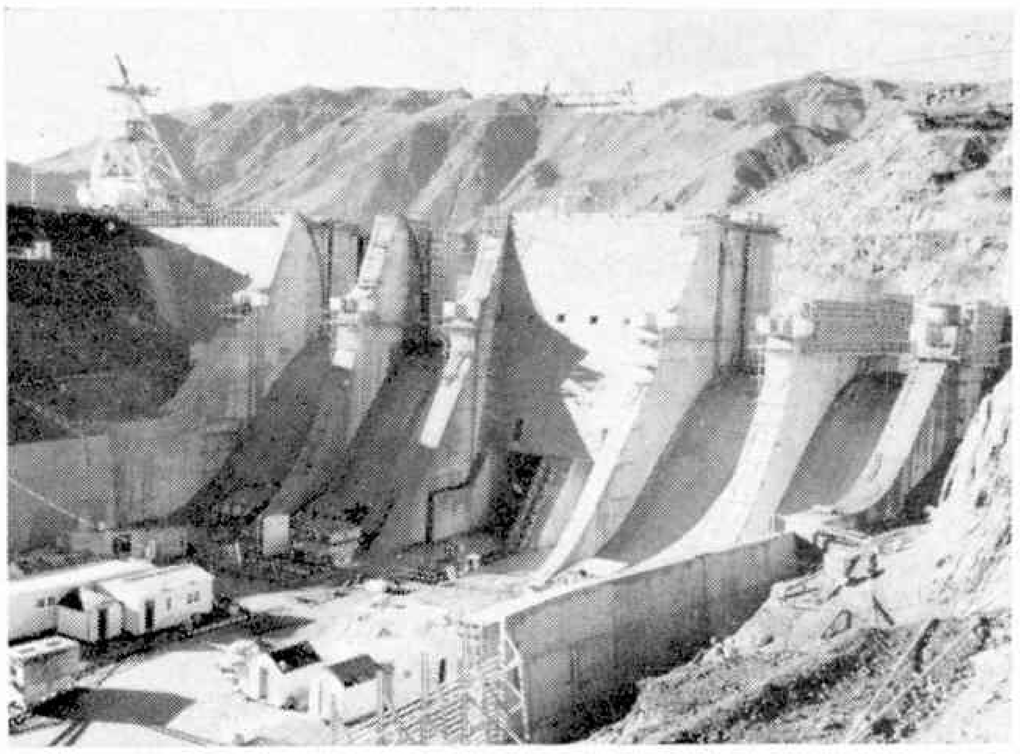
When operating at its full capacity, this 360 feet high dam, containing 27 million tons of material and costing some £36 million, will have a total peak output of 540,000 kilowatts. It will provide 2,100 million units a year, 25 per cent more than the whole of the North of Scotland Hydro-Electric Power Board's schemes. It is also approximately double the annual output of the largest single station in the famous Snowy River scheme in Australia.

The project will also create New Zealand's largest man-made lake, flooding some 3,000 acres of low producing, tussock-covered river terraces and providing a power storage equal to that of lakes Tekapo and Pukaki combined. With an area of thirty square miles it will hold a volume of no less than 321,000 million gallons of water at its retention level of 350 feet. This massive volume of water, equal to one and a half times the volume of water in Wellington harbour, is held in check by the radial control gates of the spillway channel. In emergency the level can be lowered

The penstock slope and power house construction.



The largest penstocks built! This 17 ft. 6 in. pre-stressed concrete section of the penstock is being prepared for testing.



Spillway control structure with four radial control gates and two low-level sluice gates.

by the use of sluice gates. At the average flow of the Waitaki River it will take three months to fill.

Dominating the work, although dwarfed by the majesty of the surrounding mountain peaks, is the huge earth dam and its massive power intake block and penstocks, with the powerhouse on the right bank facing downstream and the spillway structure on the left bank. These structures, with the diversion culverts, require 500,000 cubic yards of concrete.

Three main types of material are used for the embankment; 5,000,000 cubic yards of clayey gravel for the impervious core, about 10,000,000 cubic yards of sandy gravel from the river terraces for cover to the impervious core and 2,000,000 cubic yards of rock from the excavations.

To tackle this vast undertaking, New Zealand's largest and most modern fleet of earth-moving equipment has been used. This includes thirty rubber-tyred carryalls which, fully loaded, weigh seventy tons and transport twenty-four cubic yards of soil at thirty miles an hour. Other items of machinery are eight smaller carryalls; forty-two rear dump trucks; forty-one bulldozers, two of them 425 horse power; twenty rollers, from fifty-ton pneumatic-tyred monsters to a variety of vibratory models and eleven mechanical shovels.

The Waitaki river was turned from its normal course to make way for the dam builders. It now flows through a twin-barrelled concrete culvert 1,400 feet long. Each barrel is more than big enough for two lanes of road traffic—forty-two feet high and twenty-five feet wide. Each is arched at the top, and their curved walls are designed to take the weight of the earth works above them. Nearly half a million cubic yards of rock had to be broken up with explosives and removed by giant shovels and trucks to provide the trench in which they lie. Altogether some 4,500,000 cubic yards of excavation, about half of it in rock, will be necessary to complete the project, in addition to the quantity needed for the dam itself.

Some of this tough digging, calling for many miles of drilling holes for explosive charges and the use of bulldozers equipped with giant ripping teeth, was needed to prepare foundations for the concrete intake and spillway blocks. These are sited one on either side of the river.

## Core of the Dam

Still more digging was needed to clear a trench down to rock right across the gravelly river-bed and in this trench the water-tight core of the dam is being built, layer by layer of silt and gravel carefully placed and packed. Smaller trenches were dug to take the watertight cores for coffer dams upstream and downstream — temporary structures designed to keep water out of the main working area in the river-bed.

One feature of the Benmore scheme is already attracting world-wide interest. This is the use of prefabricated, pre-stressed concrete for the penstocks. Six tubes, each seventeen feet six inches in diameter and 550 feet long, will be needed to carry the water from the intake dam to the powerhouse, and they will have to withstand pressures up to 175 lb. per square inch. They are made in units eight feet long and each weighing about sixty tons. So far as is known, this is the first time that pre-stressed concrete has been used for such a combination of size and pressure.

The first electricity from Benmore is timed for early 1965, but the huge earth dam was completed in May of this year.

Within a mile of the dam a new town has grown from nothing. Named Otematata, it is a self-contained community of some 3,000 people. Laid out in accordance with the latest town planning ideas, it is fully reticulated for sewage, electricity and water. There are sealed streets and footpaths and the services include all those of a normal country town and more.

Design and construction of the civil engineering side of the Benmore scheme for the New Zealand Government is in the hands of the Ministry of Works. Electrical engineering is being dealt with by the New Zealand Electricity Department, which will take over and operate the complete power station.—**Gordon Woosey**

1. Mount Cook, New Zealand's highest peak. 2. Ahurri River. 3. Spillway Intake. 4. Spillway Intake leading to deflector. 5. Proposed road to dam crest, 6. and 9. Outdoor stations for current transmission. 7. Penstocks leading to powerhouse. 8. Concrete intake dam. 10. Tail water.

# This could be you...

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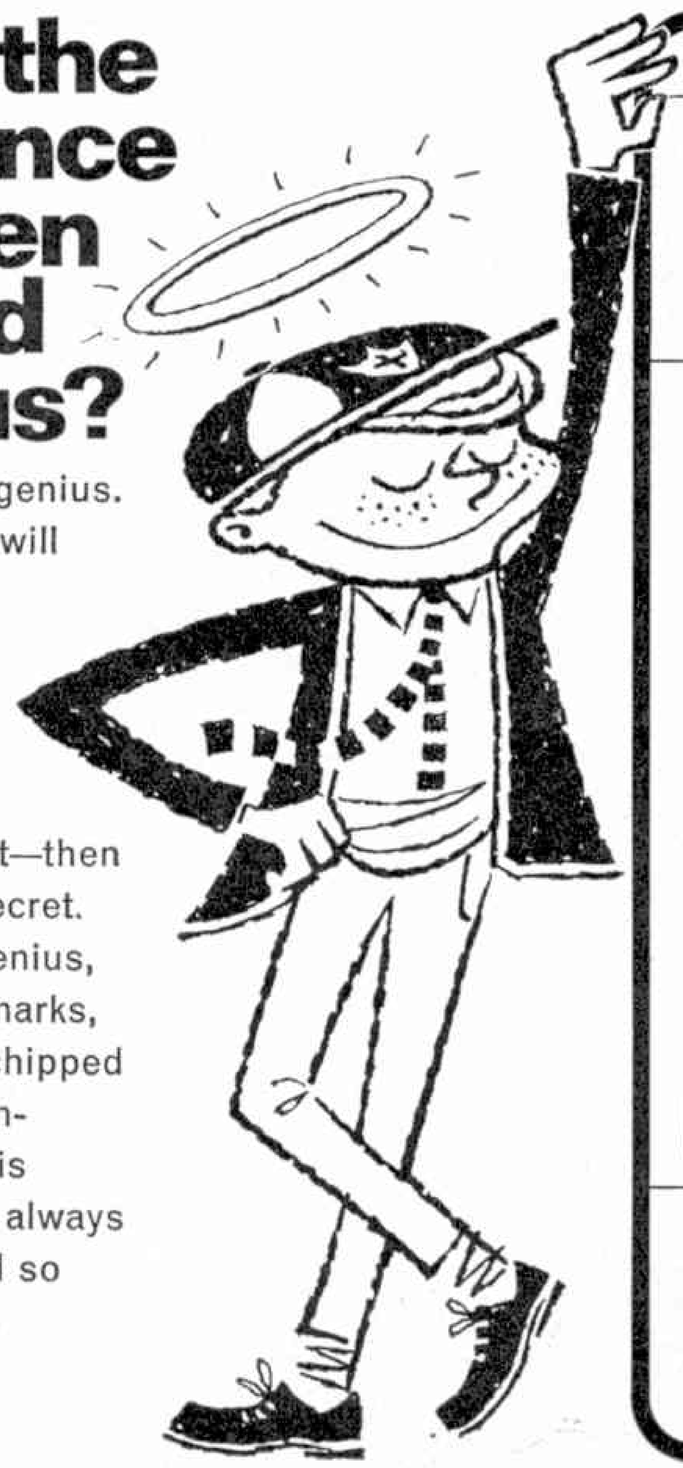
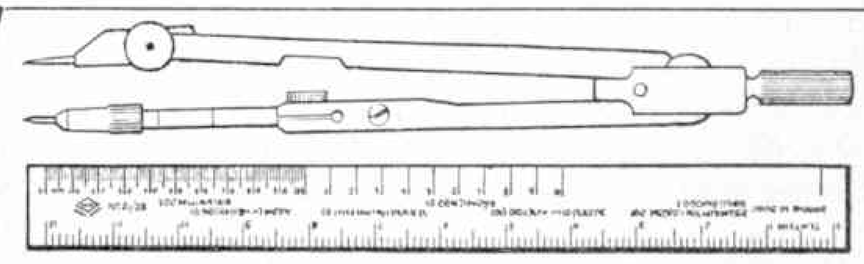
# what's the difference between you and a genius?



Maybe you are a genius. If you are then you will already know what we are talking about. If you are not—we mean, if if you have not been discovered yet—then we can tell you a secret. You'll never be a genius, or even get better marks, as long as you use chipped rulers and bent compasses. Accuracy is essential. A genius always get things right and so can you if you have good instruments.

If you want to get ahead make sure you start the term with



Helix new dual purpose compass.

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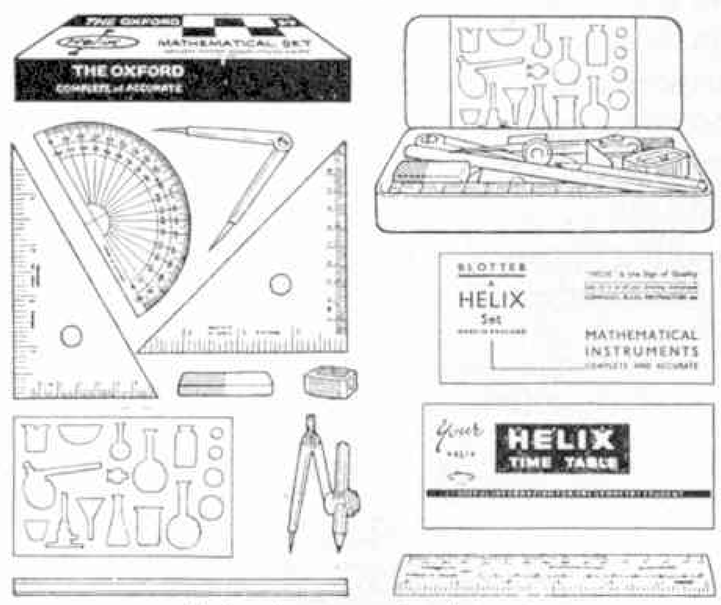
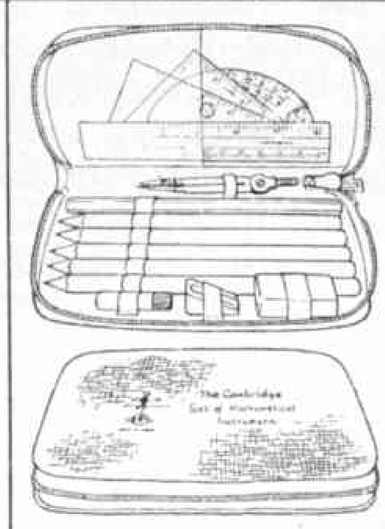
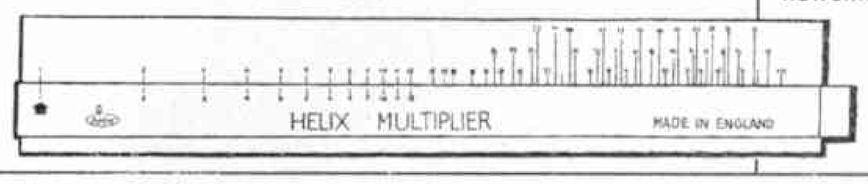



Helix all-purpose drawing set



Helix Cambridge set.

Helix multiplier—you can be a genius for 4/11 with this new simplified slide rule which gives you your multiplication and division tables in a split second.

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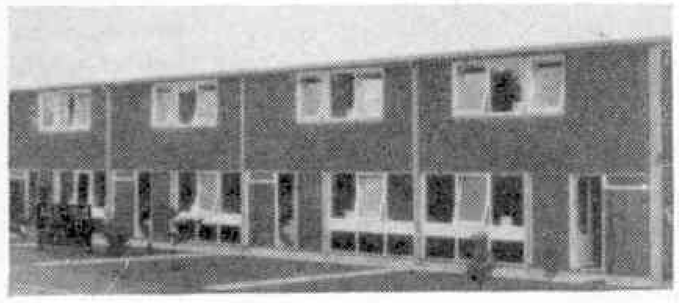
And you'll need set squares, protractors, rubbers, pencil sharpeners, geometry sets (each one has a class time table form and a list of geometric shapes.)

# mailbag

## Anything interesting . . . write about it to the editor

■ *FACTORY-BUILT HOMES*—For the first time in history factory-built houses have been put on sale in this country. The first four were recently completed at Chudleigh Knighton, near Newton Abbot, Devon.

The Modular factory-built homes can be erected by six men in 15 days

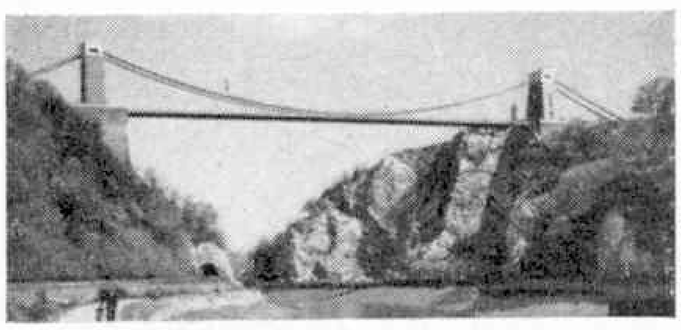


and being of all-dry construction they can be put up in bad weather. Based on a concrete frame which permits flexibility of design, traditional materials are used, but in a new and more scientific manner. The houses have four bedrooms, electric central heating and subsequent mass-production of components will, it is hoped, considerably reduce costs.

This idea of mass-production however, isn't so new as many people think. Over sixty years ago, Frank Hornby brought out the first scheme for mass-production of standardised parts that could be used in many different ways. It would appear that the modern builder owes more to the inventive genius of the former than he realises. *Cyril Wrayford, Bovey Tracey. Devon.*

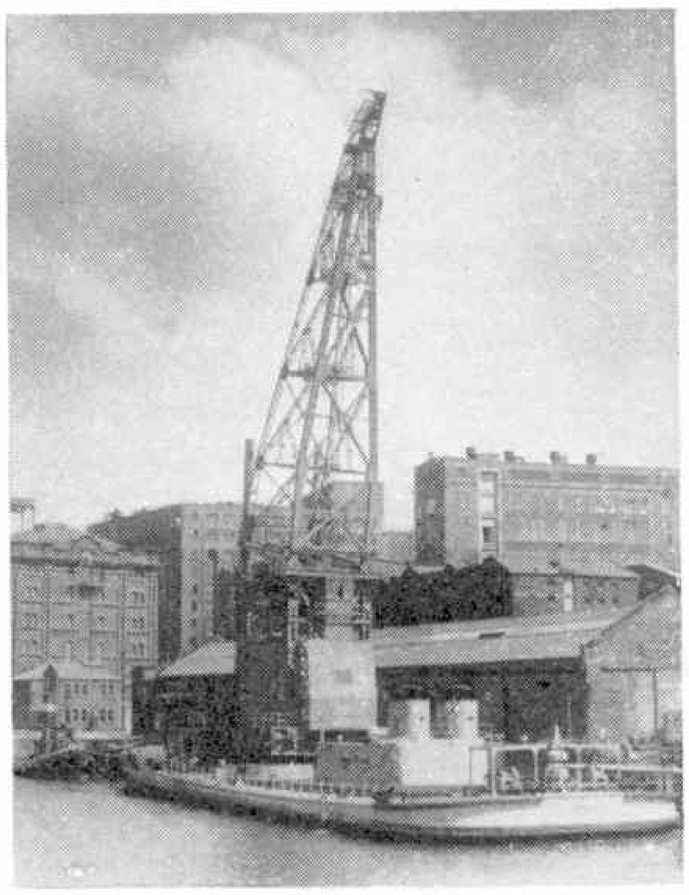
■ *HANGING AROUND*—The Clifton Suspension Bridge, completed 100 years ago as a memorial to its designer, Isambard Kingdom Brunel, who died in 1859, will celebrate its centenary on December 8. The bridge, which spans the Avon Gorge and provides a short cut from Gloucester to Clevedon and Weston-super-Mare, will be floodlit for the occasion.

Hanging 245 feet above the River Avon, the bridge is 702 feet long and weighs 1,500 tons. Its opening in 1864 at a cost of £100,000 was marked by processions, gun salutes and a banquet. *Reece Winstone, Bristol.*



■ *FLOATING LIFTER*—Among a fleet of six floating cranes operated by the Mersey Docks and Harbour Board on the River Mersey is the 60-ton revolving crane "Samson", seen here and built by Lobnitz and Co. Ltd. of Renfrew. It is 173 feet long and has a speed of 9½ knots when loaded. There is an area of 230 square yards for deck stowage.

The main 60-ton hoist has a maximum radius of 78 feet 8 inches and a minimum radius of 30 feet and the speed of hoist is 17 feet per minute. There is also an auxiliary 20-ton hoist with a maximum radius of 93 feet 8 inches, a minimum radius of 36 feet and a hoisting speed of 55 feet per minute. With a 60-ton load, the crane can be slewed through 360 degrees in four minutes. *T. Taylor, Liverpool*, 14.



■ *A MOUNTAINEERING READER*—Last Easter holidays some other scouts and I went to climb Mount Kinabalu, the highest mountain in south-east Asia. Mount Kinabalu is two miles high and in Sabah there are many legends about the mountain. One old Kadazan custom is to leave their finger-nails long when they grow old, so that when they die their spirits are able to climb to the top of the mountain.

One of the mountainsides facing Sandakah, a town on the east coast, is reserved for the spirits and no living man is allowed to climb this face.

We all travelled to the foot of Mount Kinabulu in a Land Rover and then continued along a rough road on foot for about an hour. At the end of the road there was a long flight of steps made up of rough logs which led up on to a path. After approximately another hour's climbing we reached the wireless station set on the side of the mountain and there we cooked supper and went to bed.

We set out the following morning at about 9 o'clock and the path above the radio station was overgrown and quite slippery. It was also quite steep and the higher we climbed the colder it became. When we reached the Batu Caves we were very cold, so we lit a fire and had some lunch. We rested in the afternoon and talked far into the night.

At three o'clock in the morning we continued our climb, leaving some of our gear behind in the cave. The moon was shining very brightly so we could see quite clearly. Soon we were on rock and climbing an almost sheer slope which led us to the top of the mountain. However, we still went on as we wanted to climb Lowe's Peak which is the highest point in south-east Asia.

When we reached the top of the peak, we wrote our names on pieces of paper and put them in a bottle. This we left on the peak. At six o'clock we saw the sunrise and, as it was very cold, we began our climb down the mountain. On the descent we came across a pool which contained many coins, so we each threw in a one cent piece and made a secret wish.

On reaching the Batu caves, we decided to spend the night there and set out to meet the Land Rover, which was to take us back to Jesselton, in the morning. *Tom Lodge, Jesselton, Sabah.*

■ *ANOTHER OLD OAK*—Your correspondent, P. Stevens of Minehead, in your August Issue writes that he knows of no older oak than the Newland Oak. I should like to point out however that there is such a tree.

It grows in the heart of Sherwood Forest and its girth is 35 feet and its base 64 feet. There is room for twelve people inside and was reputedly used

by Robin Hood and his outlaw band in the 12th Century. Radiation tests have shown that it is approximately 1,500 years old and the oldest tree in England. It is called the Major Oak. *Martin Coops, New Ollerton, Notts.*

# THE ROLLS ROYCE STORY

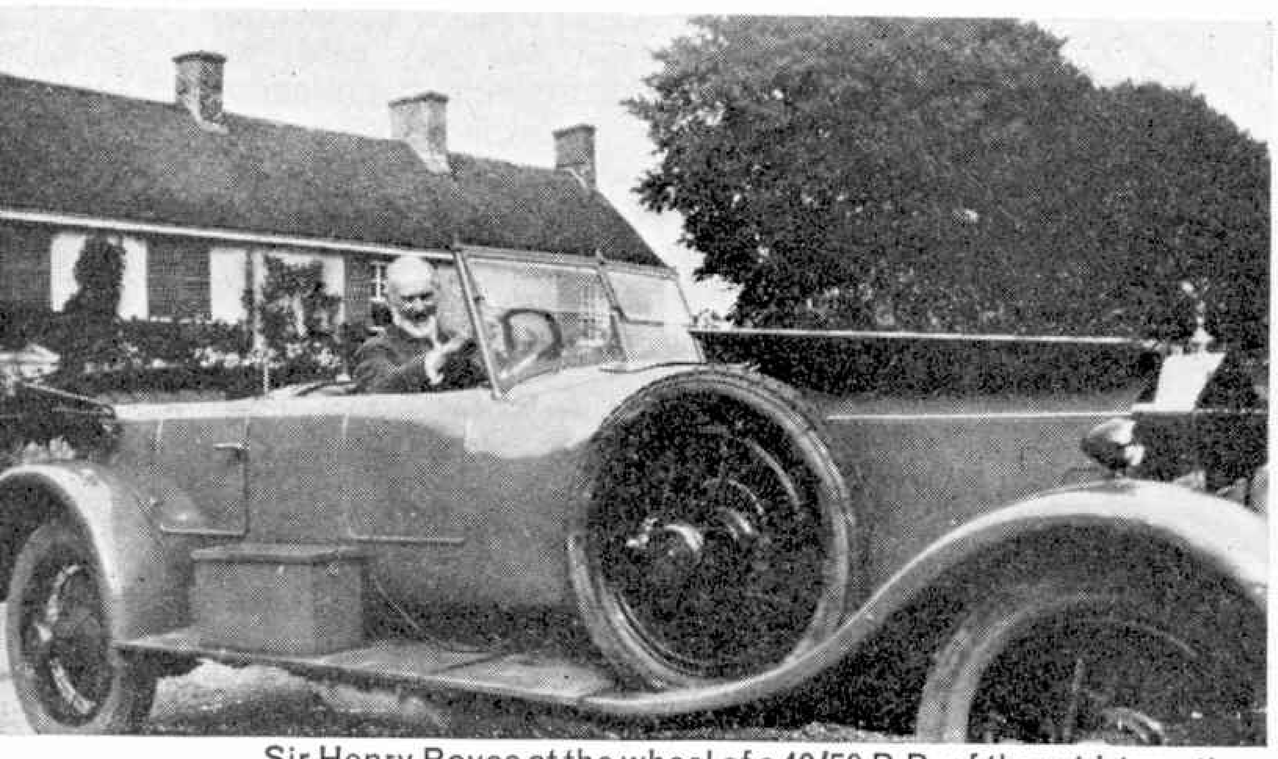
by **Jerry Ames**

WHEN Princess Margaret opens London's Earls Court Motor Show on October 21st, attention is bound to be focused on the new B.M.C. Princess R, powered by a four-litre, six-cylinder Rolls-Royce engine, especially in view of its modest price. This is the first time Rolls-Royce have permitted another car manufacturer to use its engines, a situation that would certainly have caused the autocratic engineer-founder of the firm, Sir Henry Royce, to raise his eyebrows, had he been still alive.

Today, the modern Rolls-Royce is powered by a V-8 engine, but the six-cylinder motor is one of the most beautifully made units of its kind. In fact, it is an engine that has helped to make the Rolls-Royce famous among generations of motorists, so it would be a pity to discard it completely. Like all Rolls-Royce engines, it has a wonderful smoothness that other manufacturers do not seem able to achieve—a quality that Henry Royce built into his very first motor car.

Henry Royce was the son of a miller, who trained as an engineer in the Great Northern Railway workshops at Peterborough. Later, he formed his own company to manufacture electrical cranes at Manchester. Naturally they were very good cranes, for Royce, as well as being an exceptional engineer, was a perfectionist. However, it wasn't until 1903, when he imported a French Decauville motor carriage for his own use, that he turned his attention to motor cars.

Looking at the construction of the Decauville, he felt he could do a great deal better and decided to construct a car to his own design. The very first Royce was a ten horse-power, two-cylinder car and it differed from other vehicles of its day in that Henry Royce accurately balanced every moving part. He also paid special attention to its carburation to ensure

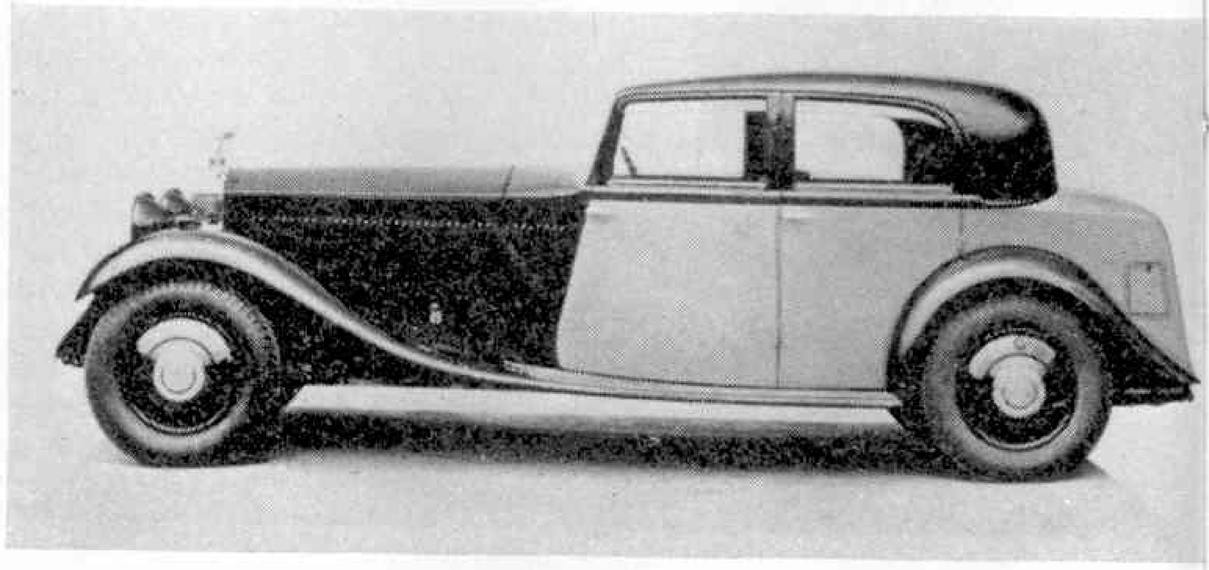


Sir Henry Royce at the wheel of a 40/50 R.R. of the mid-twenties.

even running. The resulting small car was both smooth, silent and vibration free and from it stemmed the quiet, gentle Rolls-Royce quality that has since pleased generations of owners.

Three 10 h.p. Royces were built during 1904, one attracting the attention of the Honourable Charles S. Rolls, Lord Llangatock's racing motorist son, who was then in partnership with the famous motoring pioneer, Claude Johnson. Their firm C. S. Rolls and Co., specialised in importing luxury Continental cars. Both were so impressed by the smooth running of the 10 h.p. Royce, that they arranged to take the entire production and fit bodies by the royal coach-builder Barker.

In 1905 the 10 h.p. Rolls-Royce, with Barker body, sold at £395, other models included a three-cylinder 15 h.p., a four-cylinder 20 h.p. and the 30 h.p., six-cylinder, luxury model,



Park Ward Sports Saloon on the R.R. Phantom 11 short chassis.

able to travel in top gear, even in those early days, from 5 to 55 m.p.h. Its price as a limousine £1,000.

During 1906, the firm officially became Rolls-Royce and the Hon. C. S. Rolls won the Tourist Trophy in the Isle of Man at a speed of 39.43 m.p.h. over four laps of the searching 40 miles course.

The same year, Claude Johnson persuaded his fellow directors to adapt a one model policy and months later, the immortal 40/50 Silver Ghost appeared. This was so-named because the first car, shown at Olympia, was painted silver-grey and said to be as silent as a ghost. Four years later, the Hon. Charles Rolls met his death in a flying accident.

Around 1910 it became the fashion among owners of large, luxury cars to fit radiator mascots. Some were good, others ugly and over ornate, until Charles Sykes, R.A., the eminent sculptor, designed the beautifully proportioned Silver Lady, which today is held in great esteem by all early Rolls-Royce owners.

### Rolls-Royce Sports Car

One of the few sporting cars built by Rolls-Royce was the Alpine Eagle, based on the Silver Ghost, but with higher compression ratio and four-speed gearbox. With its smart, rakish, open body, this model carried off seven prizes in the 1913 Alpine Trials and the following year, it was the only car out of 75 starters to complete the course without an involuntary stop.

Long ago, Rolls-Royce moved to an extensive plant at Derby, but between 1921 and 1926, a large number of their cars were built to the same exacting standards at Springfield, Massachusetts, U.S.A.—the only Rolls-Royce factory outside Britain and where they continued the manufacture of Silver

R.R. Phantom V, 7-passenger limousine, with coachwork by Park Ward.

Ghosts even after the Derby factory had switched to the newer Phantom I.

Towards the end of 1922, a smaller, less expensive Rolls-Royce appeared with a six-cylinder, 20 h.p., 3,127 c.c. engine. Its chassis price was £1,100 and some very attractive two-seater, drophead-coupé bodies were available for this model. From 1924, the larger models acquired front wheel brakes, but it was becoming increasingly apparent these Silver Ghosts were no longer ahead of competitors like the 37.2 Hispano Suiza. Therefore, in 1925, the magnificent six-cylinder, pushrod operated overhead valve, 7.6 litre Phantom I Rolls-Royce was introduced.

In 1929 came its successor, the Phantom II, the last car to be designed by the ageing, autocratic perfectionist, Sir Henry Royce. Although by then forbidden by his doctors to visit the Derby factory, he ruled the design office just as firmly by remote control from his house in West Wittering, Sussex.

The Phantom II had a re-designed and lowered chassis with long, half elliptic springs. Weight had been reduced, power increased and road-holding improved, but an even nicer version was the P.II Continental, which could exceed 90 m.p.h. In the 1930's, it was rated as the nearest approach possible to perfection in motoring, with spring rates that varied according to the type and weight of body.

### First 100 miles-an-hour Rolls-Royce Saloon

The Phantom III V-12 appeared in 1937, offering 100 m.p.h. performance with the last word in luxury. This model continued until the outbreak of war.

Soon after the end of the second world war, when car production resumed, Rolls-Royce transferred its car division to Crewe and there developed a very interesting model—the

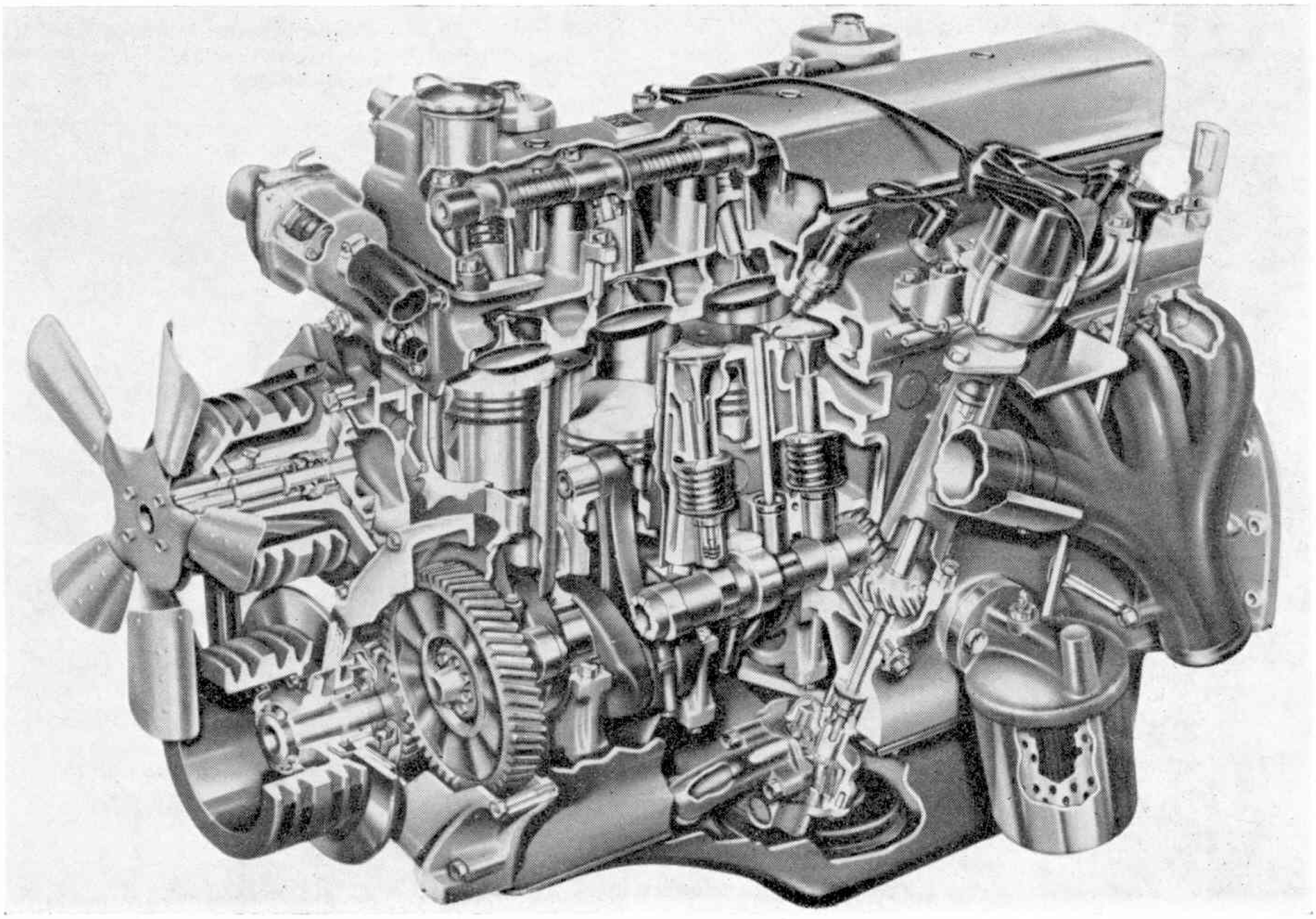
The new Vanden Plas Princess 4-litre 'R' by B.M.C. and Rolls-Royce.

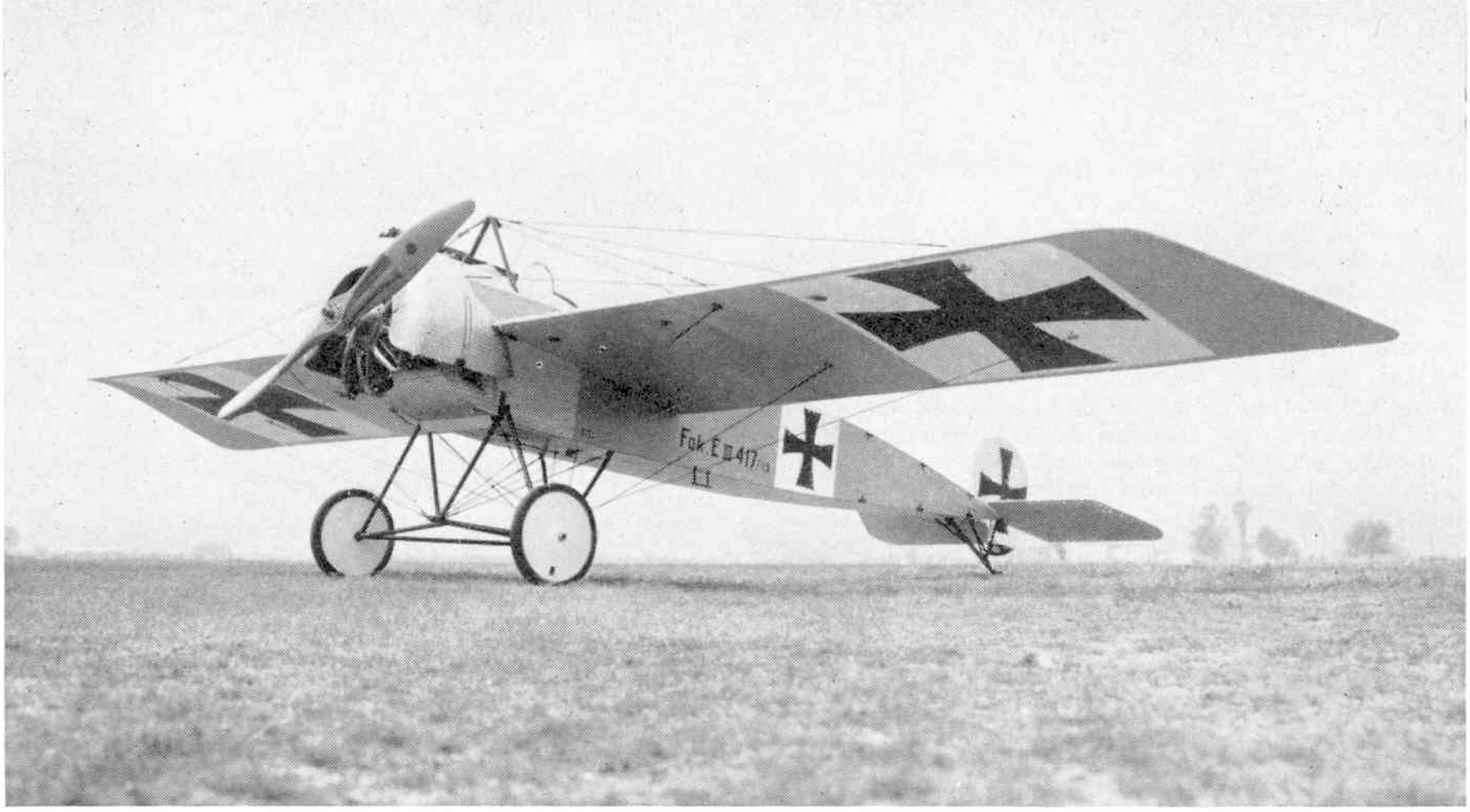
Phantom IV with straight-eight engine. These were sold to heads of state and only eighteen were built. This was followed by the Phantom V, a special model today used by the Queen.

The modern Silver Cloud III, with V-8 engine, has a top speed of 115 m.p.h. and is an owner-driver's car with such refinements as power-steering and fully-automatic transmission, offering full over-riding control.

As there is no longer a smaller Rolls-Royce, perhaps the Princess R will to some extent prove an acceptable compromise to those who wish to enjoy the smoothness of a Rolls-Royce engine for a moderate outlay.

This Rolls-Royce 3,909 c.c. six-cylinder FB.60 aluminium alloy engine, produces 175 b.h.p. at 4,800 r.p.m. and powers the new Vanden Plas Princess 'R'.






This Fokker E-III was built by Major James Appleby of the U.S.A.F.

# Famous War Birds fly again

John W. R. Taylor

THE pilot of the Sopwith Snipe fighter could not restrain a smile of satisfaction as he completed a sharply-banked turn and looked past the barrels of his twin machine-guns at the mottled fuselage of the Fokker D.VII. Forty-six years earlier his guns might have sent the German fighter spinning from the sky in flames. On this occasion, his satisfaction resulted from the fact that the Snipe was clearly as good as when it first left Ruston Proctor's furniture factory as a new aeroplane in 1918.

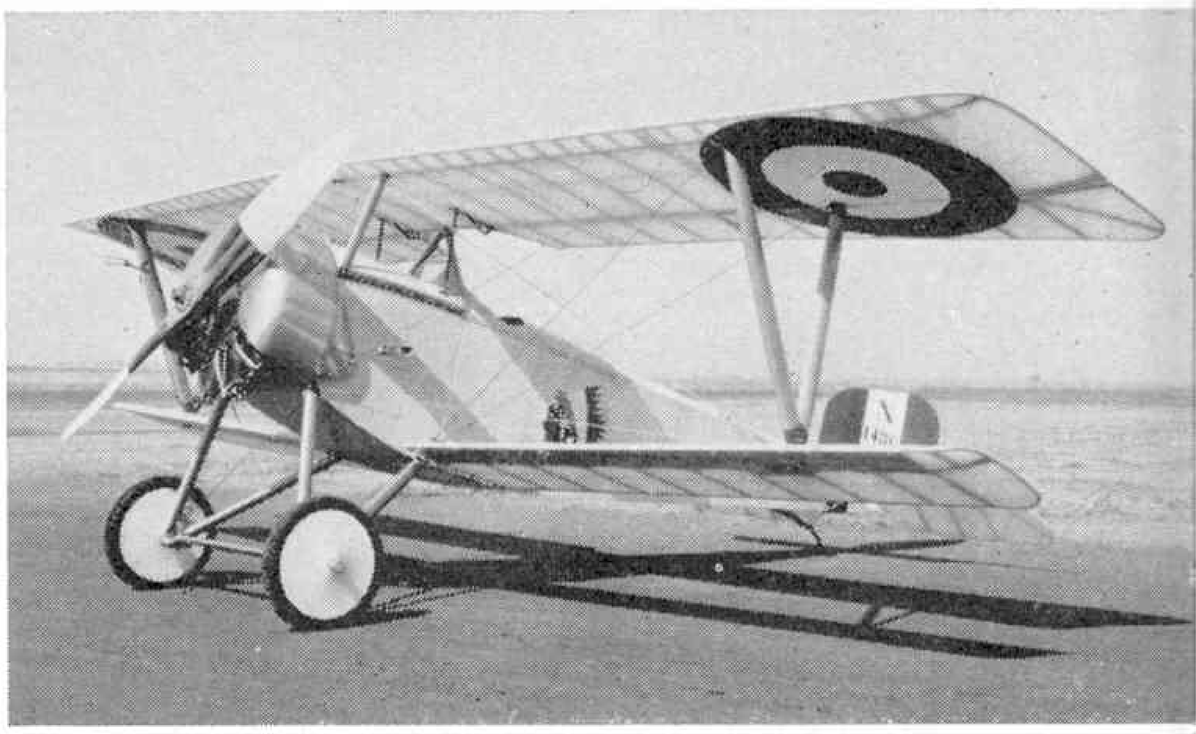
Between times the Snipe (serial number E6938) had been used for armament tests at the Royal Aircraft Establishment, Farnborough, and as a stunt-plane by Hollywood film-makers. Its story might have ended when it was badly damaged in a studio fire many years ago. Instead, its remains were acquired by an aviation engineer who was determined to make it fly again.

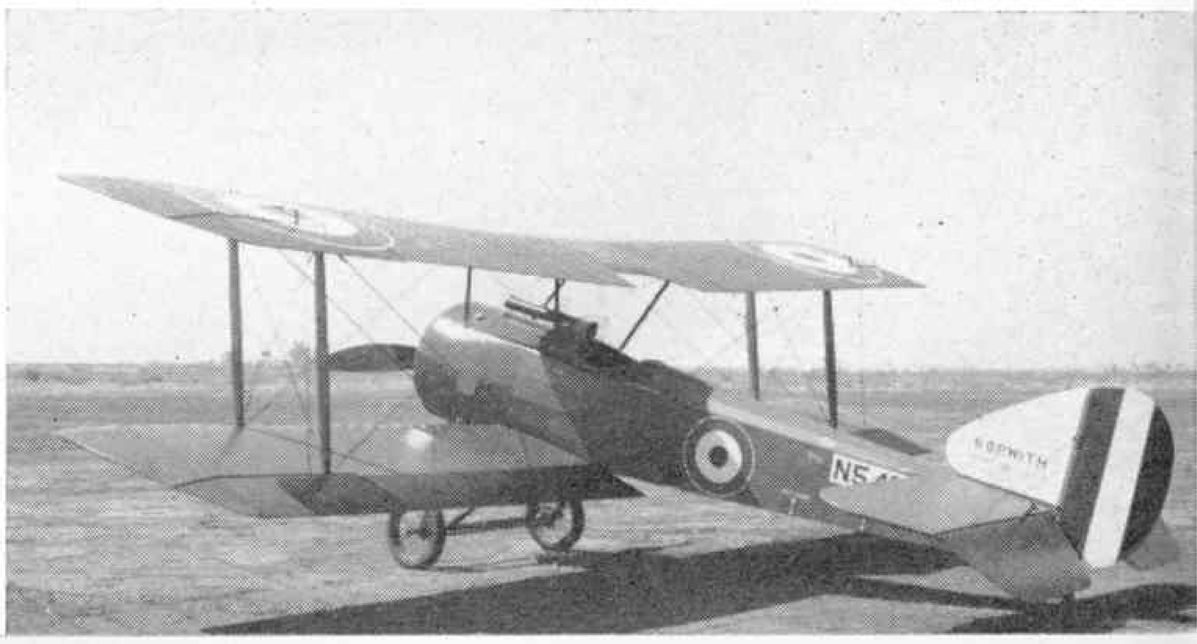
He did most of the work himself, but found that certain big equipment companies were willing to help. Dunlop rebuilt the wheels and Smiths restored the tachometer. The U.S. Air Force Museum gave him a compass and private individuals supplied a pair of genuine Vickers guns. The original 230 h.p. Bentley BR-2 rotary engine showed few signs of old age and, skilfully repainted in its original colours, E6938 ranks today as probably the finest World War I aircraft still flyable.

It is not difficult to imagine why men are willing to devote thousands of hours to rebuilding aeroplanes like this Sopwith Snipe. Old 'planes have all the mechanical appeal of a veteran car, plus the added attraction that they made history in the first air war. The chunky, brightly-coloured Snipes, Camels, Fokkers and Spads of 1914-18 were the war-birds of aces like Mannock, Rickenbacker and von Richthofen, and will always seem more exciting than the smooth, brutally-powerful and often-unpainted combat aircraft of today.

It is astonishing how many of them still survive; but the demand far exceeds the supply, especially in America. So, having run out of wrecks to repair, many pilots are now starting from scratch and building exact replicas of 1914-18 fighters and bombers. Three such replicas are illustrated on this page and only an expert could tell that they are not 'originals'.

Most ambitious of the three, perhaps, is the Fokker E III monoplane, built by Major James Appleby, of the U.S.A.F., as it is authentic in practically every detail. Instead of





*Above:* The Pfeiffer-Addems Nieuport 11. *Below:* Pfeiffer Sopwith 'Pup'. Both are flying replicas of famous World War 1 aircraft which now thrill crowds at air shows.

being fitted with ailerons, the wooden wings are warped, or twisted, by wires to make the aircraft bank, as were the wings of the E IIIs of 1915. There are no fixed tail surfaces, only a rudder and one-piece 'all-flying' tailplane of the kind that was abandoned in 1916 but brought back into fashion on the latest and fastest military aircraft of today.

The only compromises were made when original parts could not be found. Thus, an American-made 80 h.p. Le Rhone rotary engine is used instead of the German Oberursel version of the same design, and a Vickers gun takes the place of the correct German Spandau-Maxim.

An interesting feature of the Le Rhone is that, as in all rotary engines of that era, the crankshaft is bolted to the airframe and the cylinders rotate around it. This is exactly opposite to what happens in a modern radial piston-engine, in which the cylinders remain stationary while the crankshaft rotates. The spinning weight of the cylinders of a rotary engine tends to make the aeroplane want to drop its wing on one side and pilots have to watch out for this.

### Almost Perfect Replicas

Major Appleby has experienced little difficulty in mastering his Fokker. He logged about 100 flying-hours in it during the first year after completion and many modern home-built light planes are flown less than this.

The other replicas illustrated were both built by Joe Pfeiffer, a well-known restorer of veteran 'planes. The Nieuport 11 Bebe is not quite so 'genuine' as the Fokker, as the original design had a few shortcomings. The lower wings sometimes began to flutter and break up in a dive, so Mr. Pfeiffer has made the wings of his replica stronger than the Nieuport designers considered necessary. Also, the fuselage is made of steel-tube instead of wood.

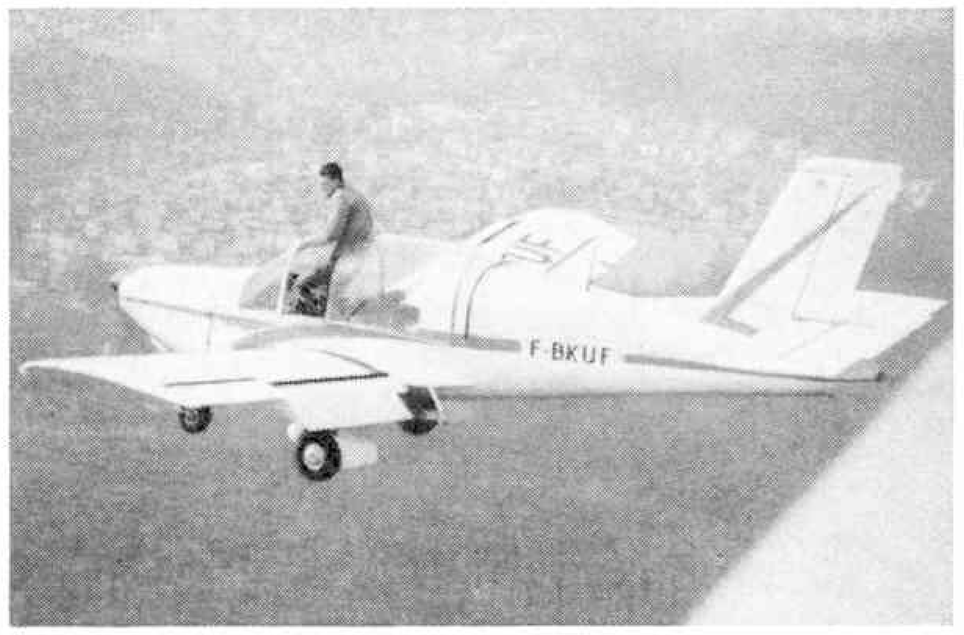
Such changes are visible only on close inspection and the replicas even appear to inherit something of the character of their forbears. For example, the original Sopwith Pup fighter is remembered by 1914-18 pilots as the most pleasant aeroplane ever built. Mr. Pfeiffer's replica has retained this controllability and is being used by other pilots as a trainer on which to learn the peculiarities of the Le Rhone engine before attempting to fly their own rotary-engined replicas.

### Hubbard's Dog

Surprising as it may seem, the rather serious-looking animal depicted on the badge of No. 73 Squadron of the Royal Air Force is none other than Mother Hubbard's dog of nursery rhyme fame.

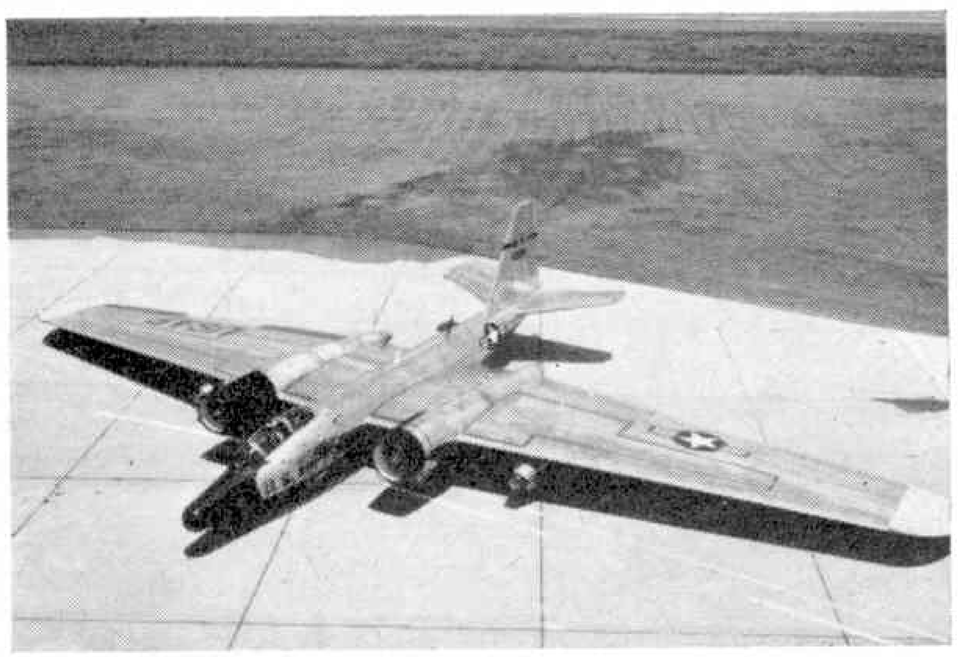
To find out why, we must go back to January 1918, when No. 73 Squadron went to France, commanded by Major T. O'B. Hubbard. He took his dog with him and, inevitably, the Squadron became known as 'Mother Hubbard's Own'. Before long, its Camel fighters bore a badge showing the disappointed dog nosing into an empty cupboard, the device being surrounded by a 'C' to denote the many Canadians serving with the Squadron.

When No. 73 re-formed in 1937 and sought approval for an official badge, it was ruled that the only heraldically correct method of showing the dog was as a talbot, the hunting dog said to have been introduced to Britain by William the Conqueror, and the Canadian association by a maple leaf. Hence the present-day badge on the Squadron's twin-jet Canberras is, in heraldic parlance, 'a demi talbot rampant charged on the shoulder with a maple leaf'.




### A Question of Stability

The gentleman standing up in the cockpit of a Morane-Saulnier Super Rallye in the above picture is not about to bail out—in fact he is not wearing a parachute. With nobody else on board, he stood on the seat to prove that this little French light plane is so stable that it will keep itself straight and level without any help from the pilot.



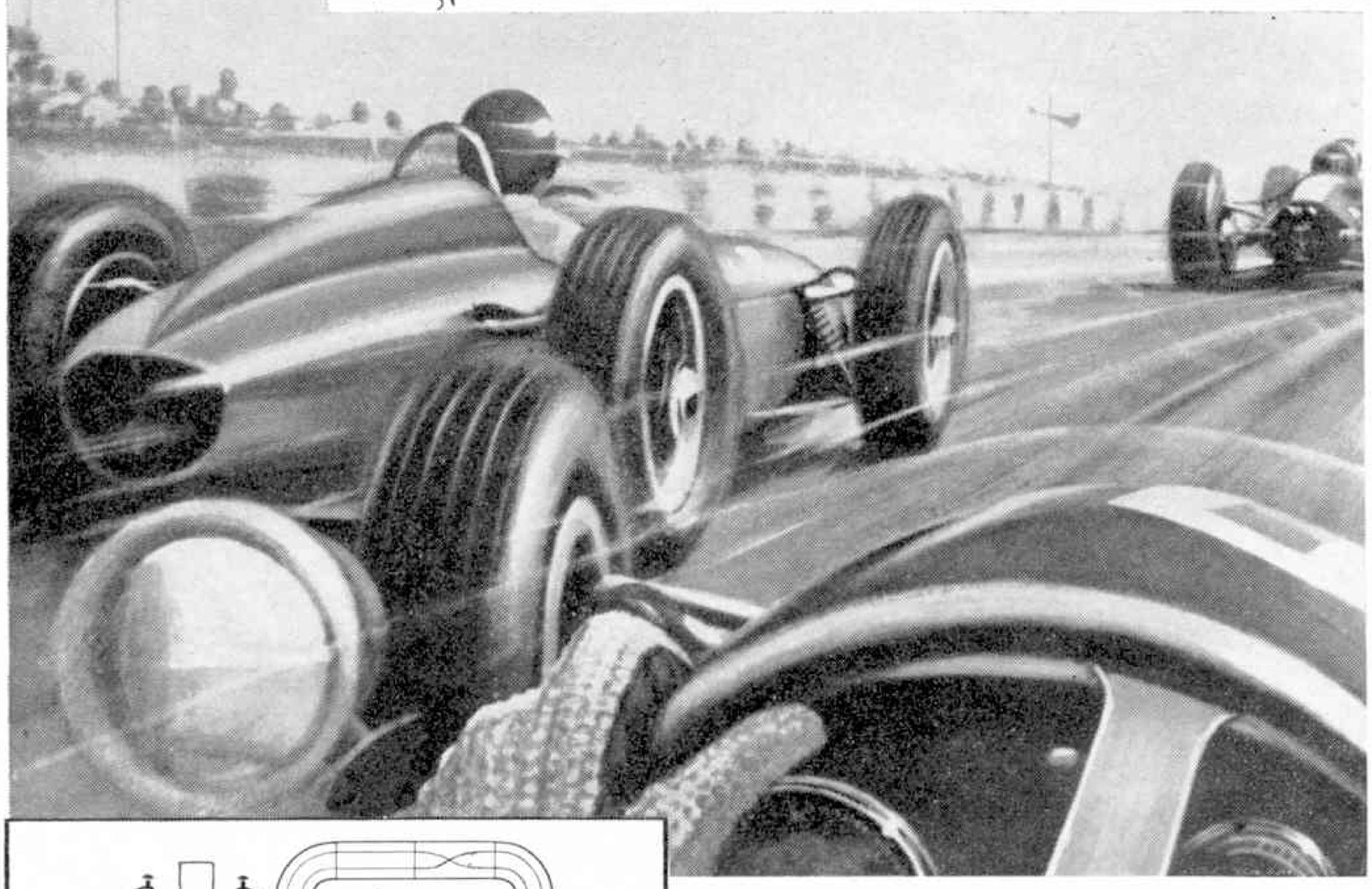
### Another Variation on a Theme

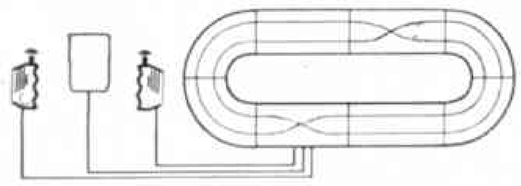
Since Britain's first jet-bomber, the Canberra, flew for the first time in 1949, it has been built in 27 different versions, in three countries. None has been more remarkable than the latest American version, the RB-57F, shown here.

Little of the original design remains except for the fuselage and tailplane. The wings have been extended to 122 feet, about double the former span, and the engine power has been more than doubled by fitting a pair of 18,000 lb. thrust Pratt & Whitney TF33 turbofans. In addition, there are two 3,000 lb. thrust J60 turbojets under the wings to improve further the RB-57F's outstanding high-altitude performance.

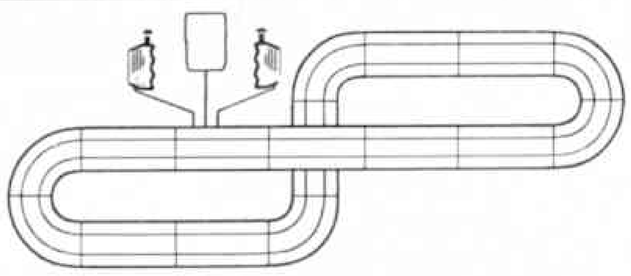
Twelve B-57 bombers are being converted into RB-57F's by the Fort Worth Division of General Dynamics Corporation and the first was delivered to the U.S.A.F.'s 58th Weather Reconnaissance Squadron at Kirtland Air Force Base, New Mexico, in June. Their jobs will include taking samples of the air at great heights to check for radioactivity; but their high performance and the electronic equipment with which they are packed makes them equally useful as 'spy-planes' for military reconnaissance.

# BE A CHAMPION!

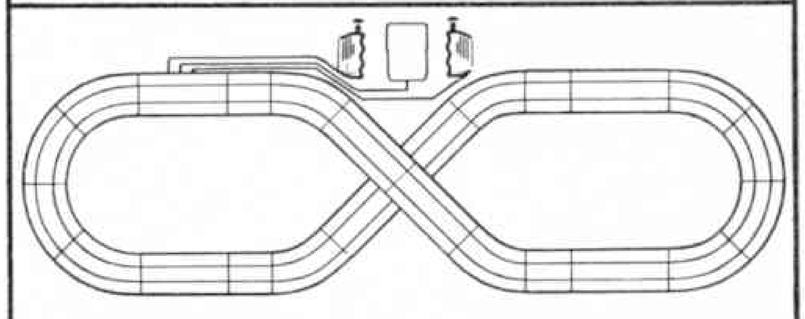




**X.100 Set A. 79/11** 6 ft. of track, using small radius (Inner) curves and two cross-overs. Area of layout—36″ x 15″.

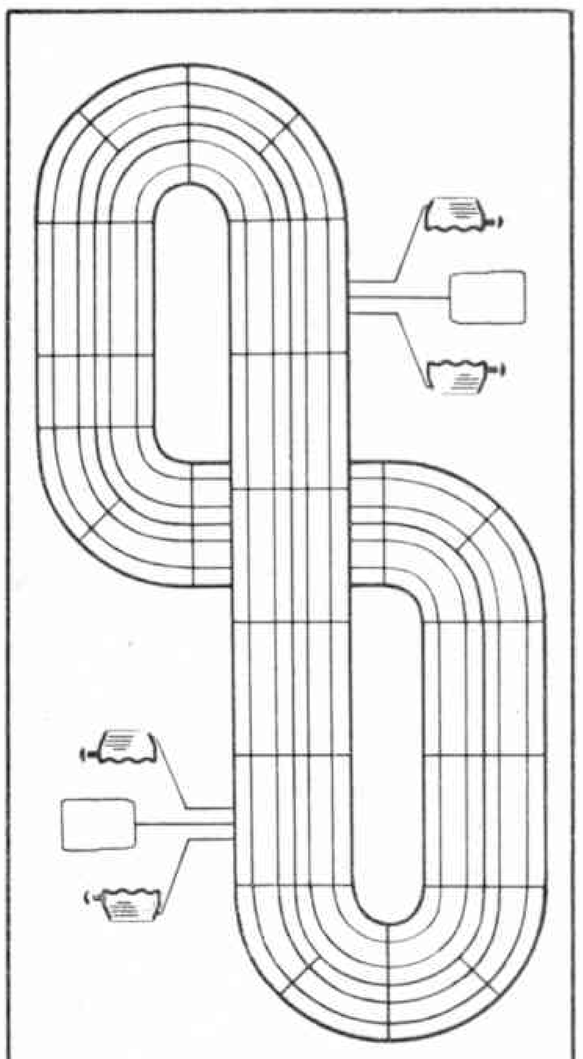


**X.110 Set B. 99/11** 12½ ft. of figure-8 track, using small radius (Inner) curves. Area of layout—66″ x 25″.



**X.120 Set C. 130/-** 16 ft. of figure-8 track, using large radius (Outer) curves. Area of layout—83″ x 25″.

WITH NEW



Sets B and C combine to form this 4 lane layout. 28½ ft. of figure-8 track. Area of layout 69½″ x 34″.

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Race along to your local toy shop now! Go CHAMPION!

X.350 E-Type Jaguar Sports. Length 4⅛″. 19/11. Also hard top version.

X.361 Ferrari Formula 1. Length 4⅛″. 19/11d. Also in plated finish. 21/-

X.353 Mercedes 300 SL Hard Top. Length 4⅛″. 19/11d. Also open sports version.

X.360 BRM Formula 1. Length 4⅛″. 19/11d. Also in plated finish. 21/-

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**Ask Tom Sheridan and he will do his best to answer it. If he cannot, and he thinks one of our readers might be able to help, he will print your query in this feature. Questions should be sent on postcards bearing your full name and address (but these will not be published if you put them in brackets and just add your initials or a pen name). Address them to Tom Sheridan, *Meccano Magazine*, Thomas Skinner and Co. (Publishers) Ltd., St Alphage House, Fore Street, London, E.C.2.**
**You may submit as many questions as you like. We will deal with as many as possible each issue.**

## Sweepstake Museum

**Q.** *Is it true that the British Museum was started as the result of a sweepstake? — 'Bookworm', Harpenden, Herts.*

**A.** Yes; it was founded in 1753 on the proceeds of a lottery, by which £101,952 was raised and a net profit of £95,194 realised. Of this sum, £20,000 was used to acquire the collection of books and manuscripts, coins and medals, natural history specimens and other treasures left by Sir Hans Sloane, which formed the nucleus of the museum. Another £23,000 went in buying and repairing Montague House, in Bloomsbury, where the museum was opened on January 15, 1759. Only privileged ticket holders were admitted until 1810, when it was opened to the public. The present building, begun in 1823, was completed in 1847; the famous Reading Room opened 10 years later.

## Hair Count

**Q.** *How many hairs are there in a human head? — P. O'M., Loughborough.*

**A.** The average human scalp has about 120,000 hairs, or 1,000 to the square inch. Blondes have as many as 140,000; brown-haired and darker types rather less than 110,000 hairs; and redheads about 90,000, red hairs being twice as thick and tough.

## TV Ghosts

**Q.** *What causes 'ghost' images to appear on a television screen?—C.F., Wokingham, Berks.*

**A.** The radio waves which carry television signals may sometimes be reflected by objects in their path, such as a large building or water tower. Though the waves travel at the speed of light, the reflected signal reaches your aerial a fraction of a second later, resulting in a second picture which is slightly displaced on your screen, producing a 'ghost' image. Similarly, signals reflected by low-flying aircraft may reinforce or cancel out the signals you receive direct from the television station, causing a fluttering effect in the picture.

## Big Swim

**Q.** *Who made the best Channel swim this year? — 'Deep-ender', Bromley, Kent.*

**A.** A record time of 9 hrs. 35 mins. for the France to England crossing was set up by Barry Watson, a 25-year-old Yorkshire printer, on Sunday, August 10. He cut an hour off the previous record, achieved three years ago by Brojan Das, a Pakistani.

## Fatal to Flies

**Q.** *Can houseflies die of disease?—'R.S.V.P.', Matlock, Derbyshire.*

**A.** Yes. Fortunately for us, insects suffer from much the same kinds of disease that humans do. Viruses and bacteria, fungus diseases, worms and parasites all plague them, and help to keep down their numbers. One particular germ kills about half the houseflies it infests, and a fungus disease, similar to ringworm in humans, attacks and kills millions of flies and grasshoppers every year. Other insects die from organisms similar to those which cause cholera and malaria in man.

## Magic Digits

**Q.** *What is a cyclic number?—James Willard, Portsmouth.*

**A.** One which, when multiplied by certain other numbers, has the same digits of which it is composed, occurring in the same order, in the answer. Such a number is 142857. If multiplied by any number from one to six, it will produce the same figures as in the original number, though some will be at the other end of the line. For example: $142857 \times 3 = 428571$.

## Making Maps

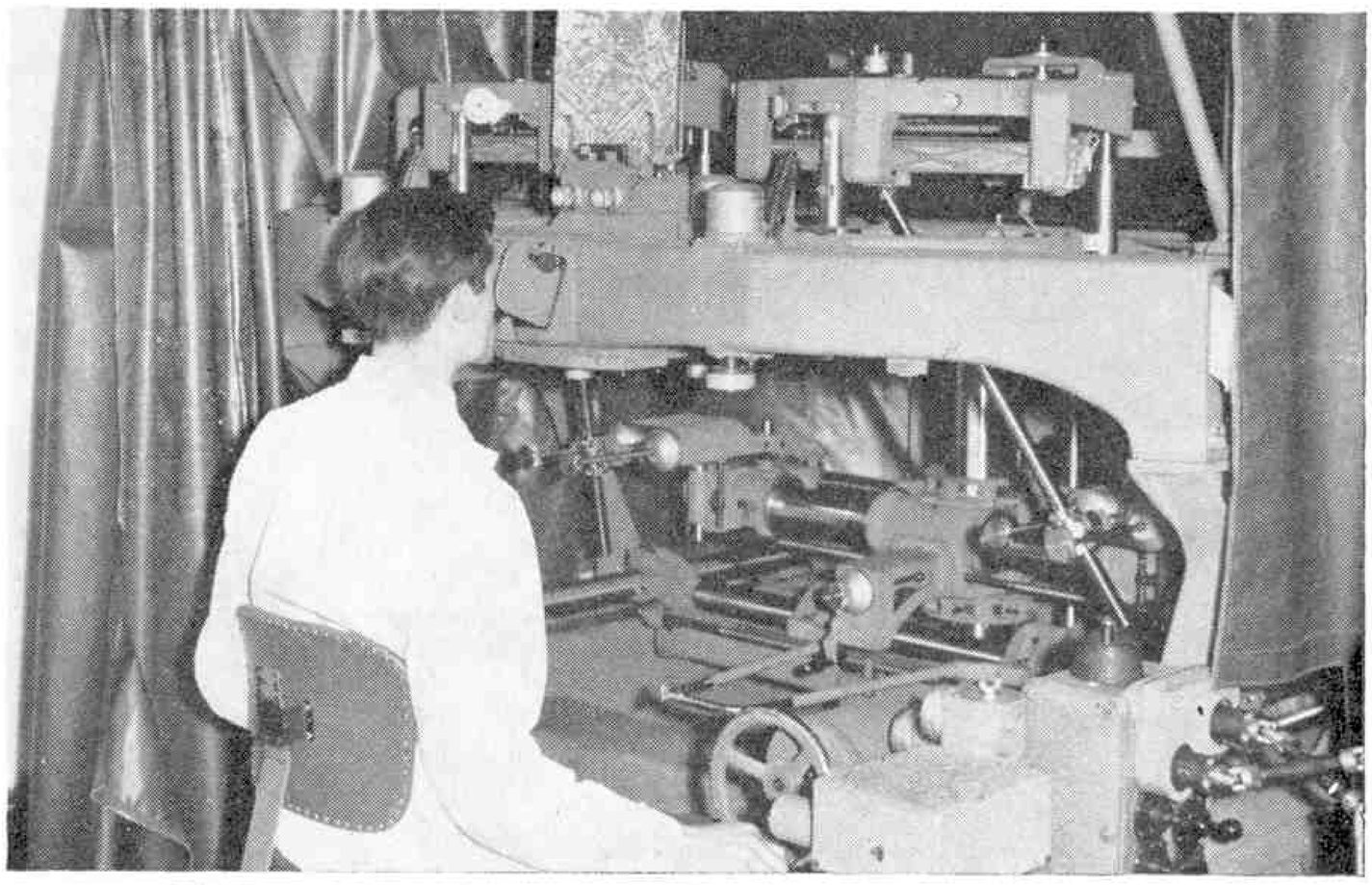
**Q.** *How long have aerial photographs been used in map-making?—G.W., Sandown, Isle of Wight.*

**A.** As early as 1858, the French army engineer, Aimé Laussedat, who founded the science of photogrammetry—the use of photographs for measurement—took pictures from the air, using kites and captive balloons, by remote control. Later, stereoscopic cameras were used from balloons, parachutes and rockets and, in 1909, the Frenchman, Maurisse, took the first photographs from an aeroplane while flying over Mourmillon. The science made swift strides during World War I, the first aerial camera designed to take strips of overlapping pictures being produced in 1915. It is from such photographs, made into transparencies and projected through coloured filters in multiplex machines, that today's maps are produced.

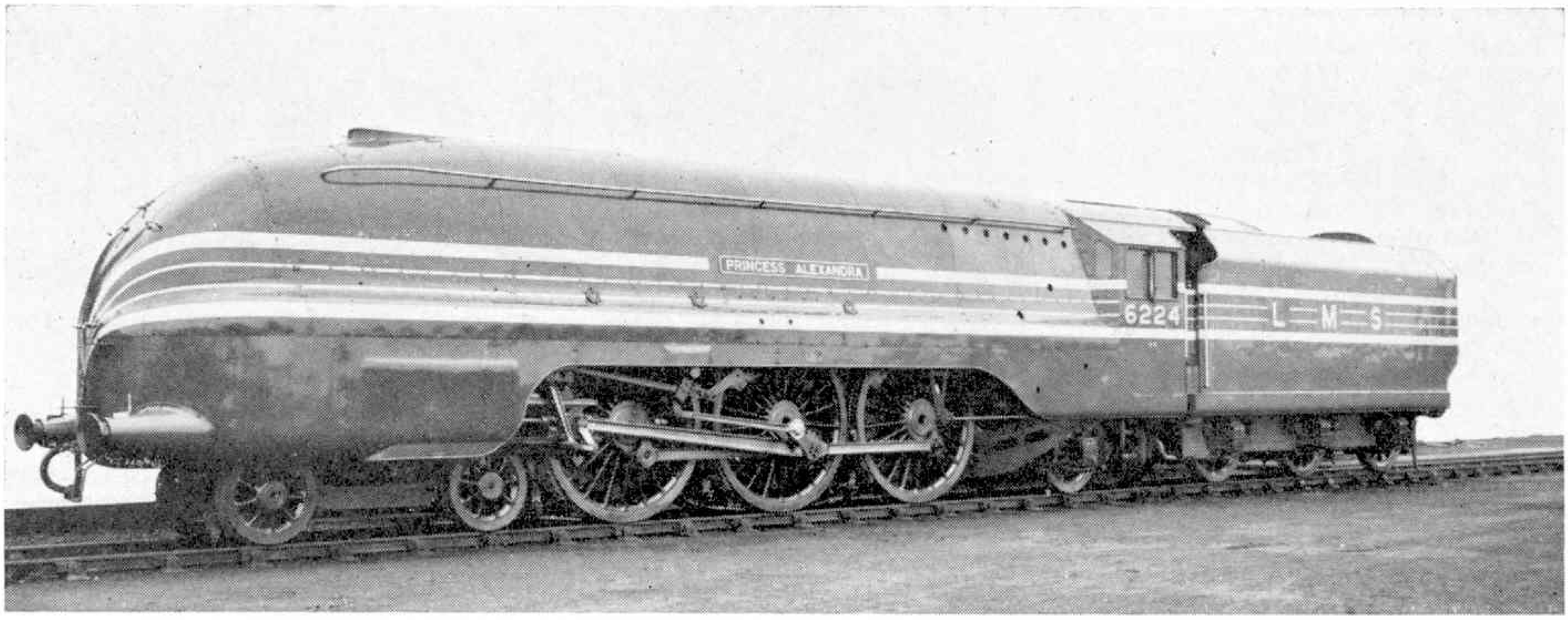
## Soviet Science-fiction

**Q.** *Where can I find some Russian science-fiction—translated into English, that is?—'Student of S-F', Nottingham.*

**A.** *Russian Science Fiction*, edited by Robert Magidoff (Allen & Unwin, 25s.), presents a selection of five classic examples and six stories by contemporary writers, with a useful Introduction and notes on the authors. The compiler is director of the Russian programme at New York University.



This complicated machine copies photographs to make maps




'Princess Alexandra' of the Pacific streamlined Coronation Class built by the L.M.S. Railway.

# LOCOMOTIVES BY NAME

by **Michael Rickett**

ALTHOUGH the majority of railway enthusiasts and members of the public take the naming of locomotives for granted, it is a practice peculiar to Britain and the Colonies. Naming locomotives dates from the birth of the railways when the machines were frequently crude and designers gave them fine names, hoping it would make them more acceptable to the general public. Readers will remember that one of the veteran railway locomotives built by Stephenson was named 'Rocket' and other contemporary locomotives were given names such as 'Sanspareil' and 'Invicta'. Railway vehicles of this period bore a great resemblance to the stage coach and in many respects this heritage influences the railway even to this day.

The reason the practice of naming locomotives was so popular was, in all probability, also linked with the pride that the early railway companies had in the appearance of their locomotives, rolling stock and stations. In those far-off days of the nineteenth century, locomotives were often painted in the most ornate liveries and were polished and cleaned until the metalwork gleamed. Looked at in this light, names were a very appropriate embellishment to machines which were often tastefully designed to attract the attention of any passer-by. Indeed, the engines were probably one of the railways' most effective forms of advertisement. The use of an occasionally elegant and grandiose name helped to fix locomotives in the public imagination. From the operational point of view, however, they were of no help.

## Named after ships

Even present-day British Railways continue to adhere to this old tradition and a number of diesel locomotive types have received names. For example, the English Electric type 4 locomotives are named principally after ships, such as D210 'Empress of Britain', D225 'Lusitania', and D217 'Carinthia'.

Many of the former railway companies adopted the practice of allocating one name for an entire class of locomotive. The London and North-Western Railway was one such company, and many of their classes, such as 'George the Fifth' and 'Precedent', are now famous. This practice has also been continued into the British Railways' regime and most enthusiasts will know of the British Railways type 4 'Peak' class diesel locomotives, the North British type 4 'Warship' diesels and, of course, the British Railways type 4 'Western' diesels. The last-mentioned are not named after any individual item or event, but have names such as 'Western Enterprise', 'Western Pioneer', 'Western Ranger', 'Western Druid' and so on.

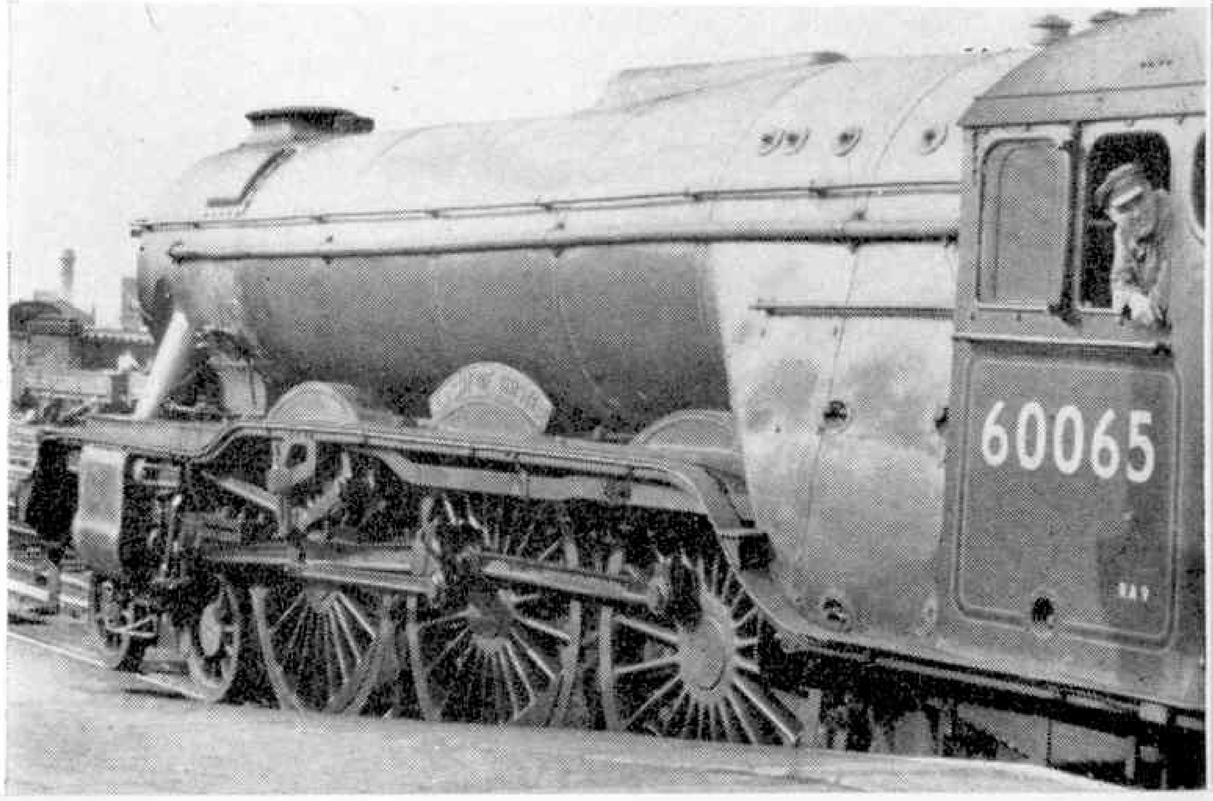
The Warship class of diesels, as the name implies, carry names of former, and in some cases, existing warships, although there are exceptions, such as D812 'Royal Naval Reserve 1859-1959'. Most diesels in this class, however, bear such stirring names as D801 'Vanguard', D802 'Formidable' and D861 'Vigilant'.

The Peak class of diesels differ slightly in the respect that not all of them have names. At the time of writing, ten locomotives in this class boast the names of mountains; the three others have been given names made famous by earlier locomotives.

## Remembrance

At one time, it was usual for only the larger express-type to be given a name, although a notable exception was the War Memorial engine of the former London, Brighton and South Coast Railway—one of their large tank engines—named 'Remembrance'. The London, Tilbury and Southend Railway also found names for their well-known class of 4-4-2 tank engines designed by the two famous locomotive superintendents of the line, Mr. Thomas Whitelegg and his son, Mr. R. H. Whitelegg. These engines bore the names of various locations on the line and well-known examples were 'Forest Gate', 'Southend' and 'Thundersley'. The London, Brighton and South Coast Railway also adopted the idea of naming a

'Knight of Thistle' of the A3 Pacific Locomotive class L.N.E.R. (Picture by courtesy of R. N. Sandford.)

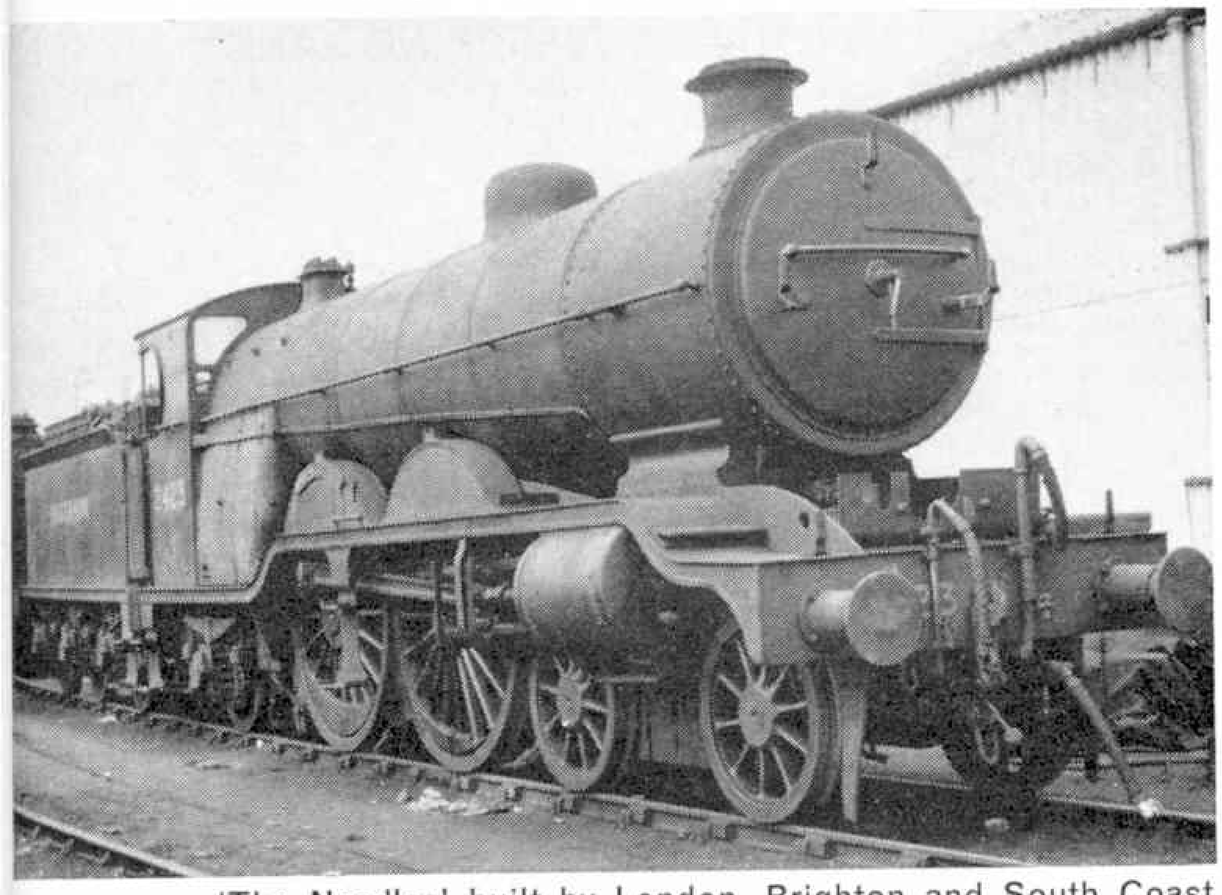


number of its locomotives after well-known places on the line.

Electric locomotives have only rarely borne names of any sort, and the one famous exception that comes to mind is the Metropolitan Railway engine 'Sherlock Holmes'.

The naming of locomotives differed from company to company, and some companies were more lavish than others. The London and North-Western Railway, for instance, named their locomotives after places, ships, mythology, history, topical events and personalities. In general, there was little to indicate the class to which the locomotive concerned belonged. Many of the more famous examples are 'Prince of Wales' and 'Lady of the Lake' and, relating to classes and not individual locomotives, 'Jumbo's' and 'Cauliflowers', so named because of the odd appearance of the company crest.

The Great Western Railway, the Highland Railway and the North British Railway favoured different classes of names for different classes of engines—a practice which has become more usual in recent times. The Great Western Railway, for instance, had its 'Stars', 'Castles', 'Kings', 'Granges' and 'Halls', the Highland Railway had 'Bens' and 'Castles' and the North British Railway had its 'Scotts' which were named after



'The Needles' built by London, Brighton and South Coast Railway. (Photo by courtesy of R. E. Vincent.)

characters in the Scott novels. The disadvantage of this method, however, becomes obvious when a large number of the class are constructed, and I think readers will agree that although 'Knowsley Hall' and 'Donnington Hall' may be all very well, one cannot help feeling that by the time 'Capel Duwi Hall' and 'Burton Agnes Hall' were reached, the names were wearing a little thin.

The same applies to a certain extent to the Castle class and Manor class of locomotives. The Great Central Railway showed a preference for names of its directors and other personalities associated with the line, and so engines appeared with names such as 'Sir Alexander Henderson' and 'Sir Clement Royds'. These locomotives were known as the 'Director' class.

When an additional class of locomotive, known as the 'Improved Directors', were built, these were named after battleships and naval battles, and so names such as 'Zeebrugge' and 'Somme' appeared. One of the classes built by this company was the 'Lord Faringdon' class, which included only six locomotives, named mainly after members of the nobility.

## Ten-Wheeled Tank

The majority of the pre-grouping companies, however, did not greatly bother themselves about names, and the Great Northern Railway, the Great Eastern, the Lancashire and Yorkshire, the North-Eastern, the London and South-Western, the Midland and the Glasgow and South-Western Railway had but a few named locomotives. The exceptions were usually named after royalty or the chairman of the company. The Great Eastern Railway called one unusual 10-wheeled tank

Warship Class diesel loco 'Active' introduced in 1958.

locomotive 'Decapod' because of its size and unusual number of wheels. Locomotives of these companies carried numbers only and, in many cases, even these were rather confusing.

On the grouping of railways in 1922-23 many of the old locomotives and their traditions were swept away and only the Great Western Railway survived in more or less original form. The L.M.S., largest of the 'Big Four', inherited much of its policy from the Midland Railway, which was not a protagonist of names and indeed spent a great deal of time erasing them from any pre-grouping locomotives.

In 1927, however, the L.M.S. introduced the 'Royal Scot' class on which it bestowed names which earlier had belonged to engines of the former London and North-Western Railway. The British Fleet was once again well represented, as also were its admirals.

The London and North-Eastern Railway, also an extremely large concern, did not have a strong legacy of named locomotives, since the principal constituent companies of the railway did not favour the naming policy. But the L.N.E.R. were not long in realising the publicity value of named locomotives and the Gresley 'Pacifics' became one of the most famous classes in existence. Names that have become almost legendary, and which stir the imagination, are 'Mallard', 'Silver Link', 'Silver Fox', 'Dominion of New Zealand' and 'Merlin'.

The Southern Railway inherited a legacy of colourful names from the former London, Brighton and South Coast Railway, but soon evolved its own tasteful system with its 'King Arthurs' and 'Lord Nelsons', named after famous historical figures and the extremely well known 'Schools' class. Later, the 'Merchant Navy' and 'Battle of Britain' class locomotives made their appearance.

Undoubtedly, the procedure of allocating names helped to build up a deep affection for steam locomotives in the public's mind, although, like all British institutions, it has its own peculiarities. Names for locomotives have varied from the elegant to the slightly ridiculous—among the latter class was a North British Railway product named 'Wandering Willie'.

In these matter-of-fact days it is pleasing to note that British Railways are maintaining an old tradition—'Britannia' locomotives may still be seen on the main lines, as can the 'Clan' class of Pacifics, which are named after famous Scottish clans.

It is perhaps significant that the last steam locomotive built by British Railways bore a name—and a very fitting one at that. 'Evening Star' heralded the end of an era—a most remarkable period during which the steam locomotive lost its monopoly to other more modern forms of propulsion.

'Scafell Pike' a type 4 Co-Co Peak Class diesel-electric loco.

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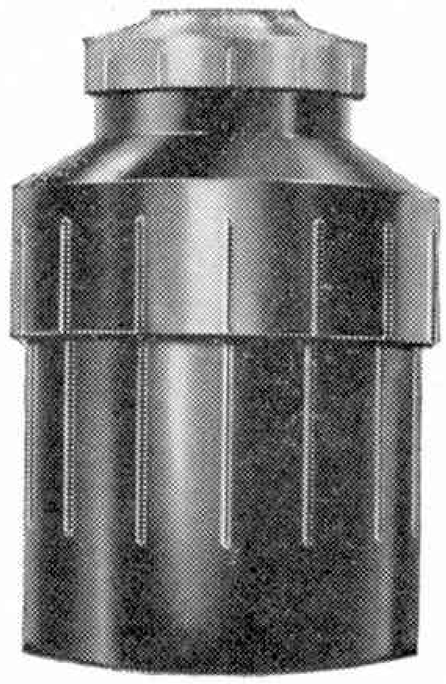

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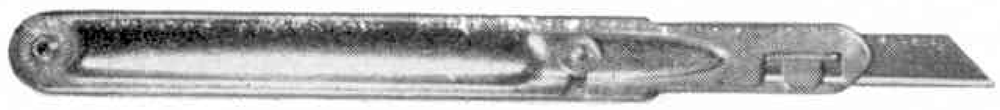

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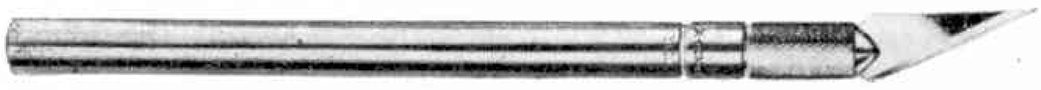

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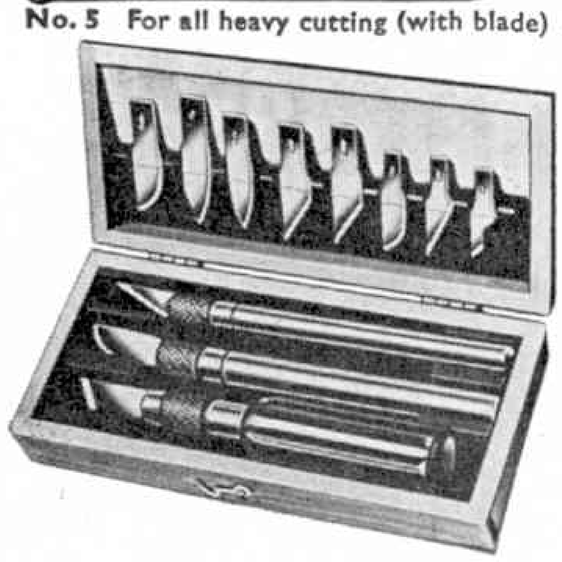

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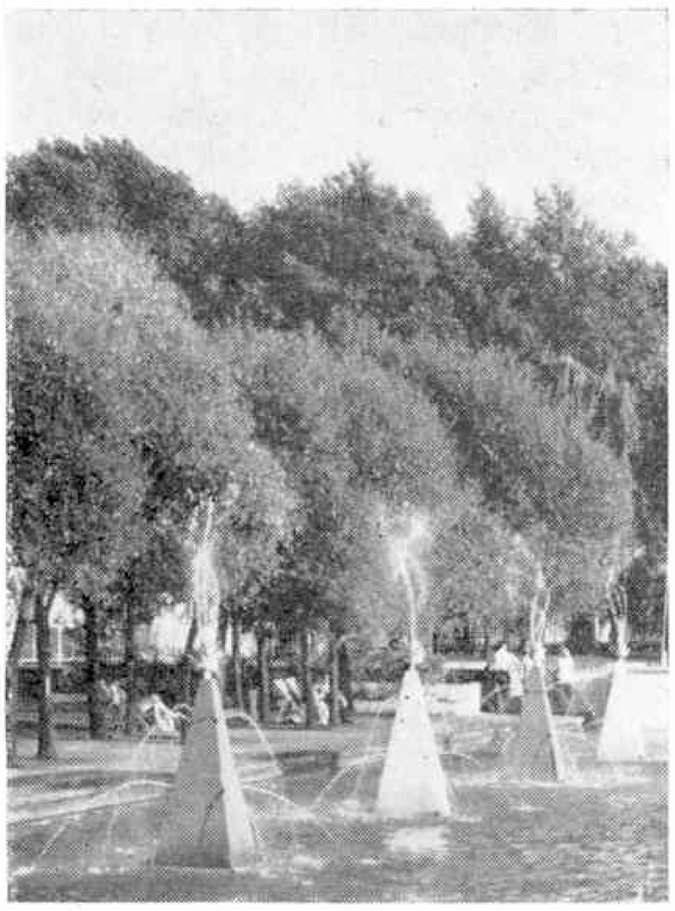
by **Paul Dong**

# Facts on Filters

IN the past two issues of Meccano Magazine, we have looked at two important features of good photography—sharp photographs and correctly exposed negatives. Another method of controlling the finished result of your picture is the use of a filter on the camera which will correct faults in the colour sensitivity of a film or alter the way in which certain colours are reproduced.

If you have never used a filter you probably have a large collection of pictures which suffer from completely white or grey sky, or grass, trees and bushes which appear as one grey mass, irrespective of the fact that when you took the picture there were several shades of green present.

A filter works by absorbing or obstructing light of a particular type, leaving less of it to enter the camera and affect the film. At the same time, filters also produce an overall tendency to under-exposure. Because of this we have to increase the exposure accordingly and the manufacturers help us by giving each filter an exposure factor which tells us how much we have to allow. A 2x filter requires twice the amount of light or exposure and a 4x, four times and so on.



Picture taken with light yellow filter. Dark fountains are red, light ones yellow. They do not appear any different on photograph taken without a filter.

Filters are available in several forms, Gelatine, Gelatine sandwiched between two pieces of glass and all glass which is dyed in manufacture. The gelatine filter is the cheapest to buy, but as it is easily marked and so rendered useless, it is really only suitable for those occasions when you want the filter for one particular use only.

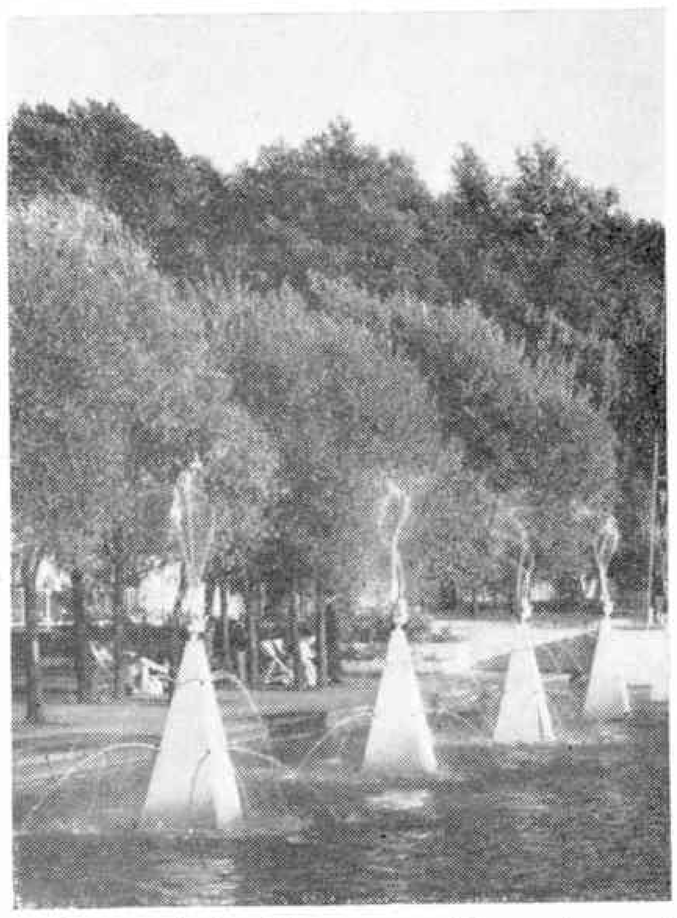
The Glass filter will cost you between five to ten shillings depending on the size, plus a few shillings for the mount to hold it on to the lens. Some camera manufacturers produce filters which are already mounted and are sold for use with a particular camera.

The best method is to buy the mount and add the filters to your collection as you need them. The mounts will often take close-up lenses as well, but before you go out and buy a mount, check your lens hood, because if it is the type which unscrews at the back to take filters you don't need a separate mount.

Apart from colour filters, which we will come to, there are four filters which are used for special effects. These are, the U.V., Polarising, Neutral Density and P.V. filters. The first three can be used for colour or black and white photography, but the P.V. or Panchromatic Vision filter cannot. It is not a true filter, in the sense that it cannot be used on the camera at all.

As you know, it is very difficult to judge exactly what you are going to get on black and white film when you look at a coloured subject. But by viewing the subject through the P.V. filter, you can get a better impression. As it is a dark violet-blue in colour, it takes some getting used to, but they are quite popular in film studios and, by using it with the colour filters which we will mention later, you can judge quite accurately the affect they will have.

The neutral density filter is, as its name implies, used purely to cut down the strength of light passing into the camera. It is

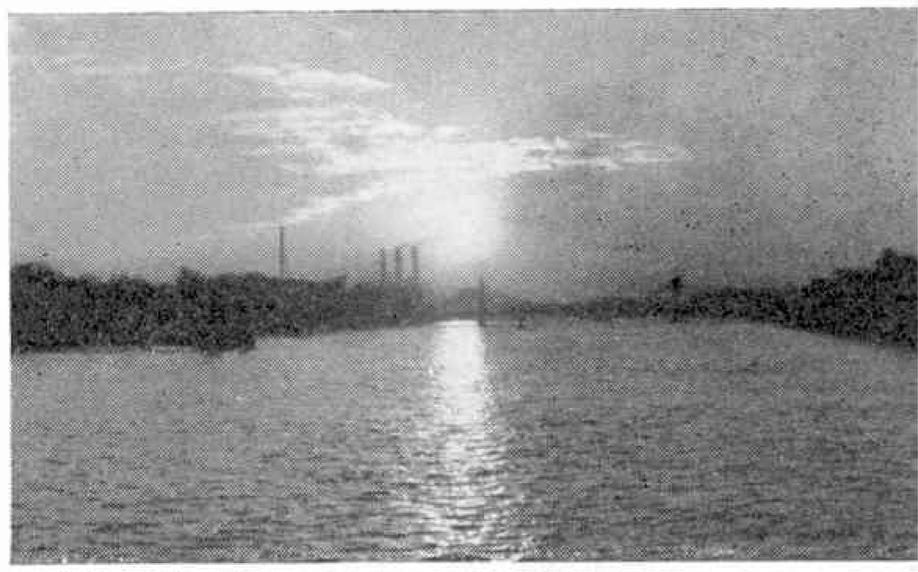


Same shot with orange filter, sky and trees are slightly darker. The most obvious point is the red fountain which appears as light as the yellow fountain.

of particular use in very bright light when your camera hasn't a fast enough shutter speed, or small enough aperture to cope. This is not the type of filter used in everyday photography.

The polarising filter is used to cut down reflections in pictures of shop windows, furniture etc. Reflected light is usually polarised, which means that it vibrates in one plane only, either horizontally or vertically. The filter is like a grid and by viewing the subject through the filter and slowly rotating the filter, you can trap the reflection and prevent it passing through.

When you have turned the filter to the best position, you put it on the camera lens the same way up. This eliminates all



'Moonlight' shot taken at 3 o'clock one winter's afternoon of sun over the River Thames using a red filter.

reflections on the picture. The factor for these filters is usually about 4x.

The U.V. filter is usually a very pale pink in colour and is useful for cutting out the large amounts of Ultra-Violet light that is present on very bright days, particularly at the coast and in mountains. This U.V. light is responsible for the haze you often get in black and white pictures of views, when it was apparently a clear day. Ultra-violet light is also responsible for the blue cast found on similar colour pictures. The exposure factor is usually small—between $\frac{1}{2}$x and $1\frac{1}{2}$x.

Now for the coloured filters and it must be clearly understood that the filters I am mentioning are for black and white photography, not colour. The most popular is the Light Yellow (2x), which will slightly darken the blue sky, making clouds a little more apparent and also slightly lighten grass. The Dark Yellow (4x) has similar but more noticeable effects. It increases contrast generally and improves the rendering of distant objects in overcast conditions. The Yellow-Green ($2\frac{1}{2}$x) and Green (4x) are particularly useful when photographing green plants and grass.

The light Orange (4x) lightens red objects including brickwork, whilst the Dark Orange (5x) lightens them even more and produces really dramatic cloud effects by darkening the blue sky considerably. These filters are particularly useful in Architectural photography.

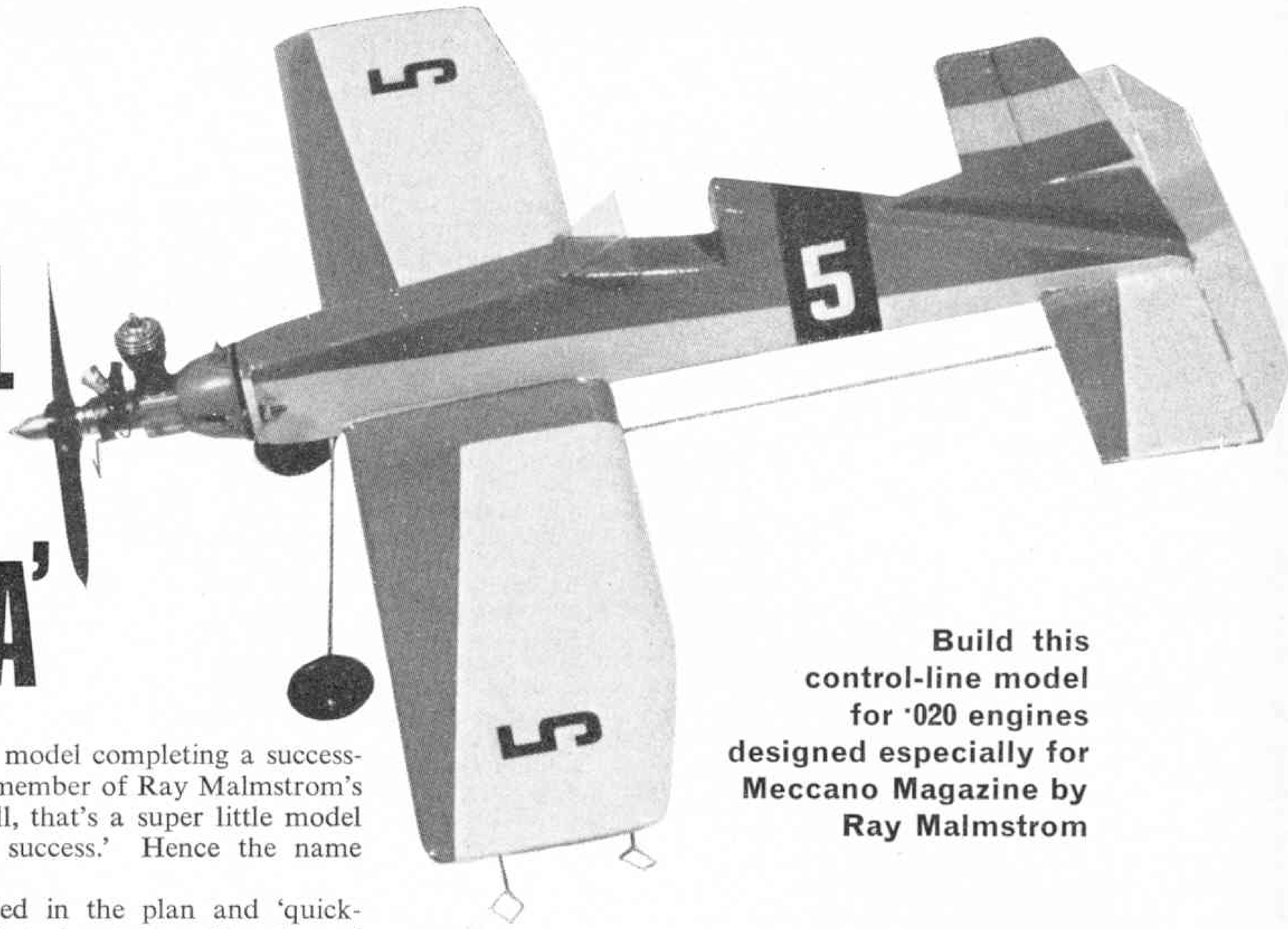
The Red filter (7x) renders yellow objects normally, red very light, blue and green very dark. It is useful for producing moonlight effects in broad daylight.

The Blue filter (2x) lightens blue objects, darkens yellow, and gives improved rendering with artificial light (not flash).

It must be remembered that like all figures given in photography these factors are only an average and can vary slightly according to the film, make of filter and the way you use them. They are, however, a good basic guide. In artificial light the results are very similar, but the factors are generally increased. More detailed information than that given here can be found in any of the special books on filters available from manufacturers or in your local library.

Dramatic cloud effect obtained with a dark yellow filter. Trees have not been lightened as they would normally be as the sun is behind them.

# CONTROL LINE 'INSTANTA'




**Build this control-line model for ·020 engines designed especially for Meccano Magazine by Ray Malmstrom**

WATCHING this slick little model completing a successful series of flight tests, a member of Ray Malmstrom's aero-modelling club said, 'Well, that's a super little model—it ought to be an instant success.' Hence the name 'Instanta'.

Construction is fully detailed in the plan and 'quick-build' sketches. Please note that due to consideration of space, pieces 1 to 7 need to be doubled in size. When building the fuselage, check your construction for squareness and ensure the wing block is accurately cut and positioned. Also, liberally cement the thread binding holding the undercarriage wire to piece A. By the way, the 16 s.w.g. undercarriage wire will need a vice for accurate bending. You can use the thinner 18 gauge wire if need be, but it is not so strong for rough landings.

Before assembling the model, it is sound advice to precement all joints and allow them to dry. Then give the surfaces another thin coating of cement and unite. This makes a really tough joint. When making the tail-plane, ensure that the movable part (the elevator—held on by tape hinges) does move freely. Hold the piece of sheet lead, or folded cement tube, to the starboard wing tip with three or four layers of tissue paper cemented in place.

## Constructing the Controls

When making up the bell-crank assembly, ensure that the pivot screw is a really tight fit into the plywood mount and wing. When you have linked up the control wires, carefully following the 'quick-build' sketches, make sure that the hooks on the ends of the lead-out wires are level and that the elevator on the tail-plane is neutral—neither up nor down. Having completed the control assembly check it for free movement. When you move the lead-out wires backwards and forwards the elevator should move up and down. Stiff or inaccurate controls will spell disaster.

Your Instanta can be powered by either a COX T.D. glo-engine (price 69s. 0d.) or a COX Pee-Wee glo-engine (price 38s. 6d.). As the price suggests, the Pee-Wee is the less powerful of the two motors. However, drawings are provided for engine mounts for both of these engines. If you use the Pee-Wee you must cut air holes where shown in Piece 5, the engine mount and in the fuselage side. The Pee-Wee inducts its air from the rear.

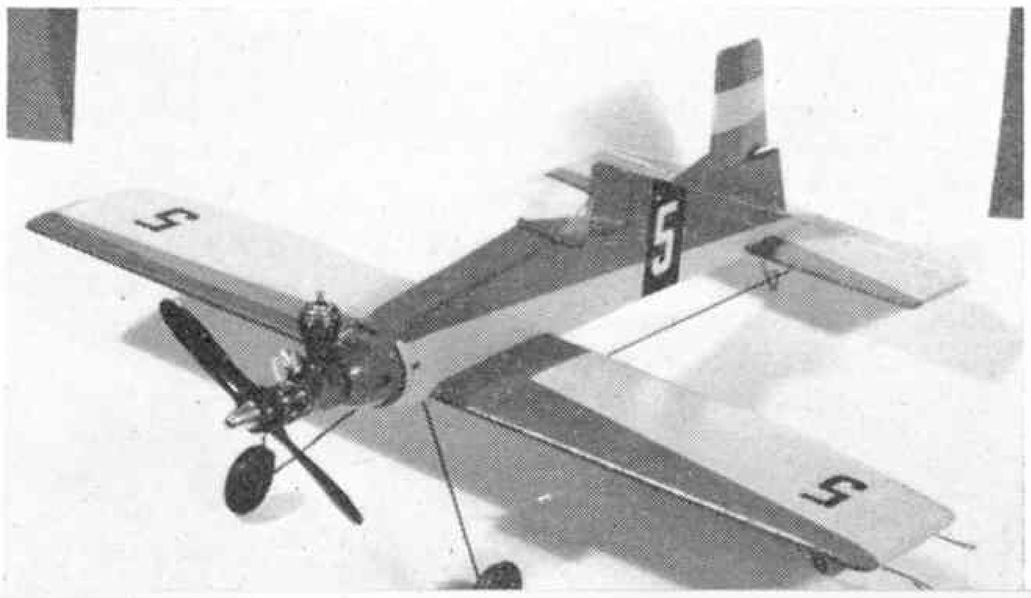
Before bolting in the engine, give the entire model two coats of clear dope, sandpapering very lightly between coats. You may then decorate the model with coloured enamel to your own design. Finally, and most important, give the entire model a coat of fuel-proofer. (Humbrol One Pack tins—1s. 6d.)

Now you must carefully check three things. 1. The rear part of the fin is turned (off-set) a $\frac{1}{4}$ in. to the right—viewed from the rear. 2. That you have also off-set the engine to the right by putting two or three washers between the engine and the engine mount. 3. That you have carefully balanced your model. Suspended from the balance point marked C.G. on the plan, the model should hang level or slightly nose down. You will need to add some noseweight (sheet lead or folded cement tube) where shown on the plan. Fix the weight securely with several layers of doped on tissue. On no account must the model hang even slightly tail down. After allowing the fuel-proofer approximately two hours to dry, your Instanta is finished.

Fly your Instanta on 20 to 25 ft. long lines of strong thread or fine fishing twine. Choose a calm day and fly from tarmac or short grass. One important point is to test run your engine before attempting to fly your model. Glo-fuel can be bought ready mixed at 4s. 6d. a bottle.

You will need a friend to release the model and make sure he points the nose of the model slightly towards the outside of the circle before he releases it. As the Instanta is a sports-type control-liner and not a basic trainer, it will help if you can get the assistance of a friend who can already fly control-line models. However, if this isn't possible, try the straight-arm method as shown in the sketch for your first flights. Just moving your arm up and down, as if pointing where you want your model to go, should give you a successful flight. When the model motor cuts out just let the aircraft glide in on its own. It sounds easy—and it is! With a little practice you'll soon be controlling the Instanta like an expert!

Ready to fly! The numerals are water transfers.



Tailplane centre line

control horn 1/16 ply

control horn slot

Undercarriage 16.s.w.g wire

tape

Tailplane 1/16 sht

22 swg wire

bend thus

A 3/32 sht

Lead out wires (2 rad)

BALANCE POINT

Add nose weight (sheet lead, etc) to obtain correct balance. IMPORTANT

1/8 ply bellcrank mount

NB Round-off all edges

Skid 20 swg wire

1" dia. plastic wheels

Wing block from 1/2 sq balsa

wing section holes if using PEE WEE

Line guide 1/16 ply and 1/4 sht

Push rod 20 swg wire

1/16 ply

1/8 ply engine mount for Cox T.D. .020

7

1 cut slot

3

Pieces 1-7 3/32 sht (shown half size)

4

5

2 Pee Wee

6

Fuselage sides 3/32 sht (heavy outline)

Thin celluloid

tailplane slot

skid tape

Wing centre line

push rod

bellcrank position (under surface of wing)

Wing 3/16 sht

cut

fit into slot in piece 1

Fin 3/32 sht

cut

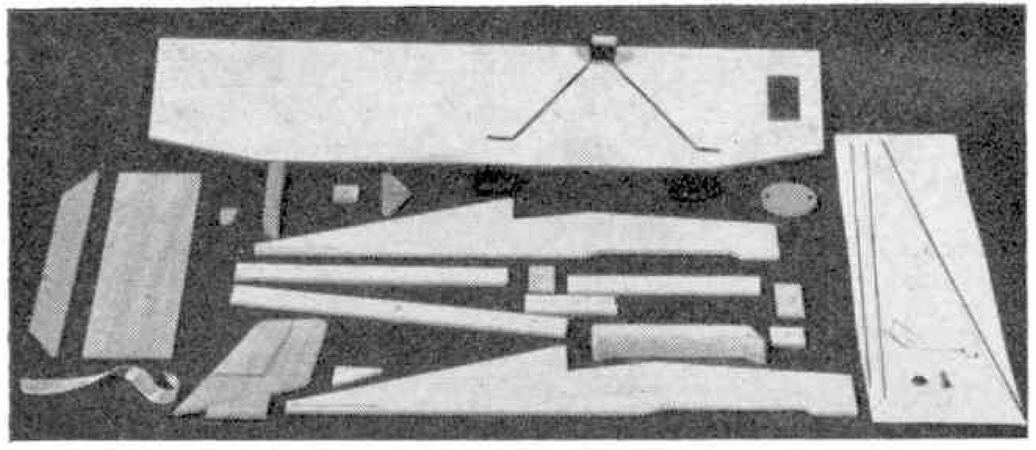
front edge

B 3/32 sht

wing weight position (opposite wing tip only)

line guide cemented

under here



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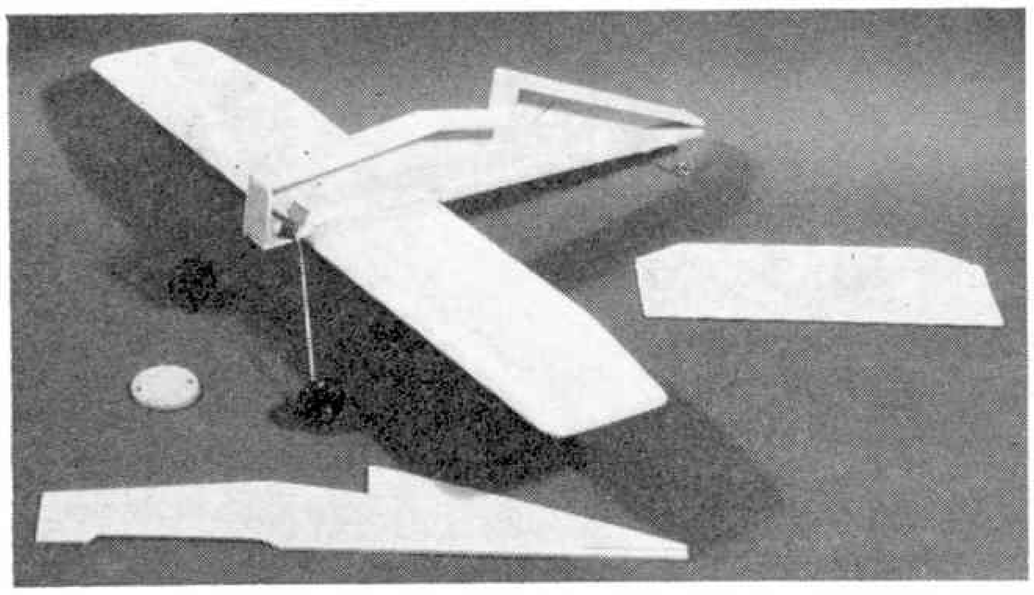

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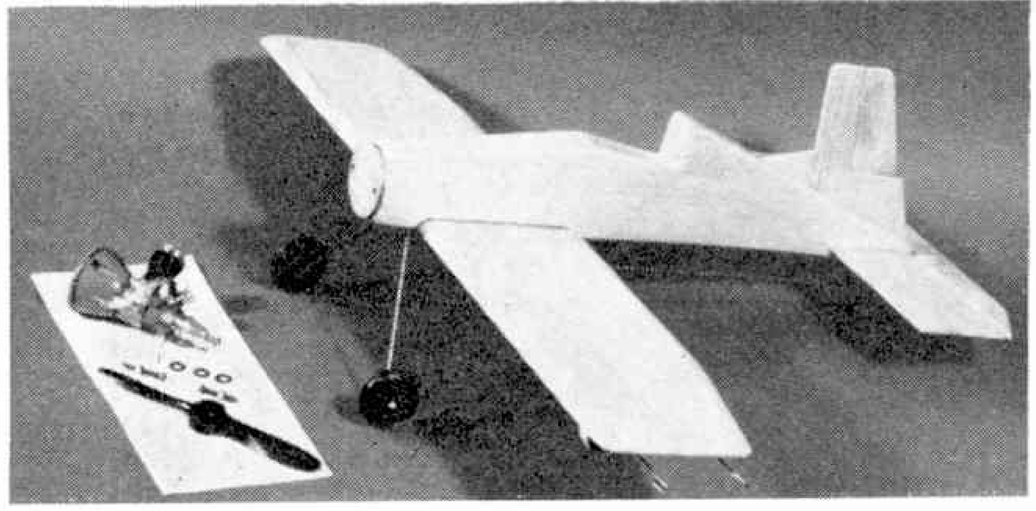
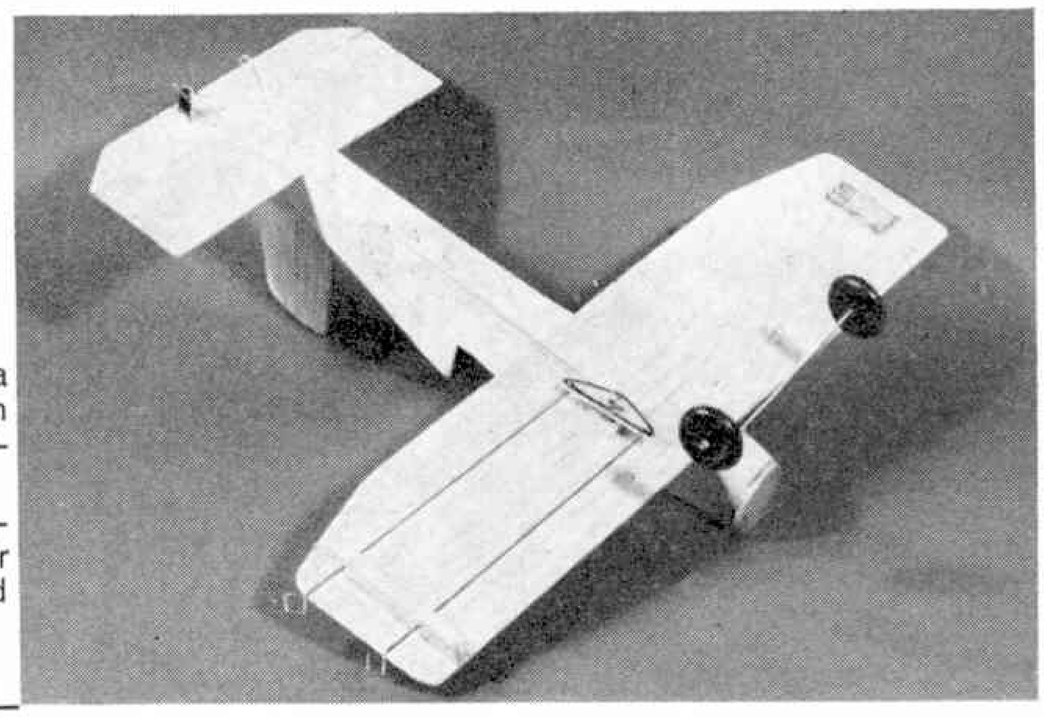


The Cox T.D. ·020 glo-engine ready for bolting on to the engine mount on the nose of the 'Instanta'.

The control rods connected to the elevator. Check with this photograph when assembling the bell-crank.

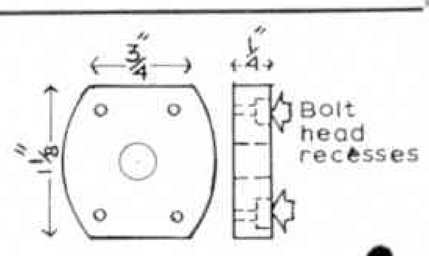


**MATERIALS REQUIRED**

1 Sheet $\frac{3}{32}$ by 3 by 36 inch balsa-wood.
1 Sheet $\frac{3}{16}$ by 3 by 18 inch balsa-wood.
1 Sheet $\frac{1}{16}$ by 3 by 12 inch balsa-wood.
Small piece of $\frac{1}{8}$ inch plywood.
Small piece of $\frac{1}{16}$ inch plywood.
1 18 inch length of 20 s.w.g. wire.
1 18 inch length of 22 s.w.g. wire.
1 12 inch length of 16 s.w.g. wire or 18 s.w.g. wire.
1 12 inch length of linen tape $\frac{1}{4}$ inch wide approx.
1 Pair of plastic, hardwood or rubber wheels 1 inch diameter.
1 Small piece of clear celluloid or cellophane.
1 Small screw or bolt.
2 Engine mounting bolts, nuts and spring washers.
Tube of balsa cement.
Small bottle of clear dope.
Tin of fuel-proofer.
Coloured enamels as required.

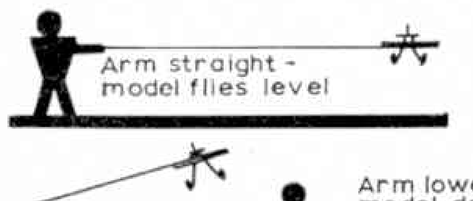
**1** All parts of the Instanta cut according to plan and ready for assembling.

**2** Simple box-type construction makes for great rigidity and strength of frame.

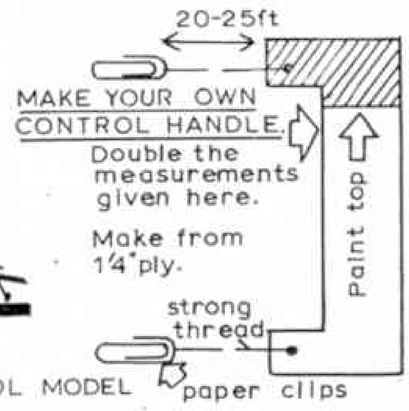


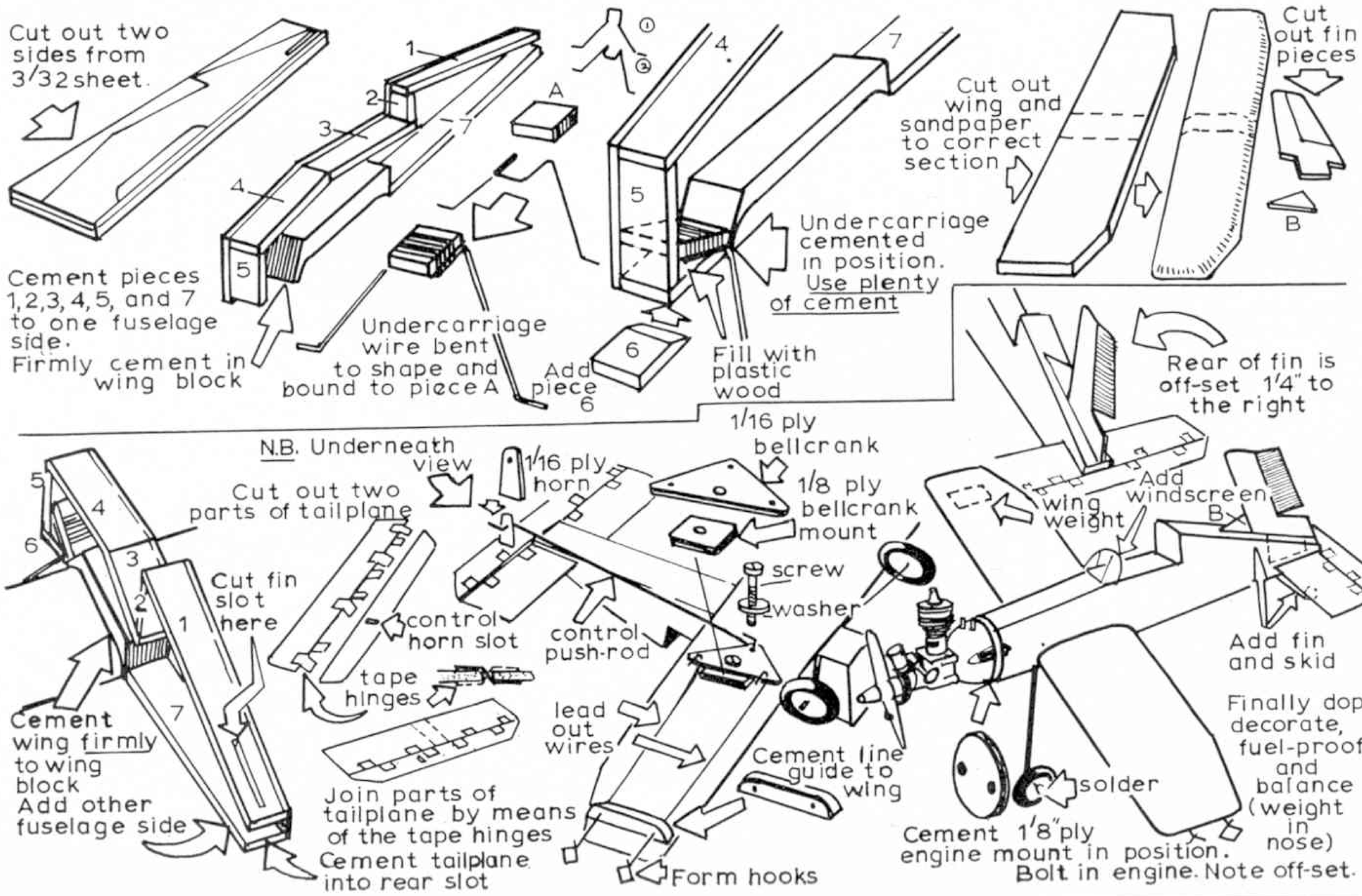

If you use a COX "PEE-WEE" engine use the engine mount shown here. Cut from 1/4" ply

Note centre air hole and recesses for bolt heads




If you are a beginner at control line flying use the "straight-arm" method shown above.
AVOID USING WRIST MOVEMENTS TO CONTROL MODEL





Cut out two sides from 3/32 sheet.
Cement pieces 1, 2, 3, 4, 5, and 7 to one fuselage side.
Firmly cement in wing block
Undercarriage wire bent to shape and bound to piece A
Add piece 6
Fill with plastic wood
Undercarriage cemented in position. Use plenty of cement
Cut out wing and sandpaper to correct section
Cut out fin pieces
Rear of fin is off-set 1/4" to the right
N.B. Underneath view
Cut out two parts of tailplane
1/16 ply horn
1/16 ply bellcrank
1/8 ply bellcrank mount
screw
washer
control horn slot
control push-rod
tape hinges
lead out wires
Cut fin slot here
Cement wing firmly to wing block
Add other fuselage side
Join parts of tailplane by means of the tape hinges
Cement tailplane into rear slot
Cement line guide to wing
Form hooks
wing weight
Add windscreen
Add fin and skid
solder
Finally dope, decorate, fuel-proof, and balance (weight in nose)
Cement 1/8" ply engine mount in position.
Bolt in engine. Note off-set.

by **John Crossman**

# Shots & Floats

EVERYBODY has a favourite float, one which has an honoured place in the tackle box because it is associated with a memorable catch. The danger is that sentiment can over-rule logic when it comes to float selection, and this may result in the same float being used for many kinds of fishing, even when it is not suitable for the job.

As a boy, I once caught seven small carp when fishing a pool on a very rainy day. I was thrilled and felt that the float I used had been an important reason for my success. At any rate, it was obviously a lucky float, so I used it for the rest of the season, whether I was fishing in deep water or shallow, running or still.

Fish of all sizes were expected to pull its portly bulk under the water — few obliged. This was not surprising because the float was shaped like a miniature pike bung. Possibly it was designed for live-baiting for perch, but certainly it had no place in the tackle of a serious carp fisherman.

Since those early days I have found that shotting largely dictates the choice of float. The first essential is to decide on the minimum load of split-shot needed to cast your tackle where you want it to go and to present the bait in a natural manner.

Successful shotting arrangements are the product of commonsense, experience and experiment. The diagrams will serve as a guide—you may be able to devise arrangements which will be an improvement.

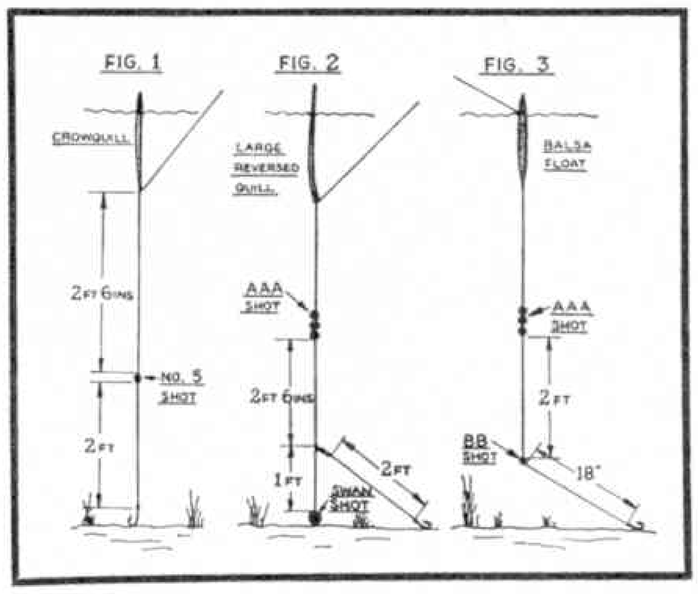
Fig. 1 shows a crow quill cocked by a single No. 5 shot. This is for close range fishing on canals or fenland drains, when there is little wind to blow the tackle about. The shot is slightly nearer the hook than it is to the float. This avoids tangles caused by the hook overlapping the float when casting.

The object of this method is to present a slow-sinking bait that will take fish whether they are feeding near the surface or on the bottom. If the latter is the case, the shot may be lowered so that less time is wasted getting down to the fish.

Fig. 2 is a method for catching bream in deep water. Bream generally prefer a still bait to a moving one—hence the large swan shot resting on the bottom to anchor the tackle in one place. The hook length is attached paternoster style so that a fish does not have to lift a heavy shot before it can move away with the bait.

Fig. 3 is a typical rig for long-trotting in river swims of moderate depth and flow. Placing the main bulk of shot together—'bunching' as it is called—adds distance to the cast and ensures that the bait sinks quickly through the current. In my example, I have set the float so that only one BB shot trips the bed of the river where the fish are lying. Fish might well become alarmed by a heavy load of shot bumping into their noses, though in flood conditions it sometimes pays to have a lot of weight near the hook.

Surgical forceps or fine-nosed pliers are useful for fixing and removing shot from the line. Beware of black, shiny split-shot. These are usually hard. The best shot are made of soft lead (generally dull in colour) and can be closed by pinching between finger and thumb.




by **David Kaye**

# Vintage Buses

AT practically every vintage and veteran rally you will find one or two examples of the old-time public service vehicles. They always add that extra touch of glamour to the exhibition and in many instances attract more attention than the ordinary vintage vehicles. An expert on the public service old-timers is Mr. F. H. Kilner of Tisman's Common, near Horsham. From 1933 to 1947, Mr. Kilner operated Sunbeam Luxury Coaches of Loxwood on a two-hourly route from Plaistow to Horsham, a service which was originally started in 1931 by a Mr. Weller of Cranleigh.

When I met Mr. Kilner he soon produced some snaps of pre-war Bedfords and a 24-seat G.M.C. He spoke of his Dennis vehicles, his Albion, his Gilford with its American Wyoming engine, his ex-Southdown Tillings-Stevens and his comfortable Chevrolet. He also told me of how he was the only operator of a German Opel many years ago in Sussex and described his first war-time Bedford OWB (FPX747) with its utility body and wooden-slatted seats. Mr. Kilner's wife also provided a little information about these old coaches, for both she and her daughter, Freda, had driven Sunbeam coaches on stage carriage routes and on school contract journeys.

The visit to Mr. Kilner's home was just one of a series I have made during the past year in an effort to build up a complete picture, as far as possible, of the host of small p.s.v. operators in my own county of West Sussex. The search for details about the old buses and coaches has proved very interesting and I have spent many fascinating evenings looking at old time-tables and prints. I also heard a good many yarns about the 'good old days' before the 1930 Traffic Acts came into operation enforcing curtailment of 'undesirable' competition. This led to the swallowing up of the independent operators by the bigger organisations, which in turn killed much of the personality and personal touch of the public transport services offered by the smaller concerns. This was summed-up quite neatly by an unknown poet, who wrote the following lines when Mr. C. Walling sold out his Silver Queen (Bognor Regis-Slindon) service to Southdown in December 1944.

"We'll see no more your shining form,
we'll miss the village chat,
The atmosphere of friendliness, the
yarns of this-and-that;
New drivers may be uniformed,
conductors smart and stern,
But how we wish we travelled still with
Tom or Fred or Ern!"

Another company in this area, which was also sold to the bigger operators, was owned by Harry West, of Arundel. Mr. West ran two 14-seater Fords and plied between the towns of Arundel and Littlehampton. This pair of vehicles appear to have been quite orthodox Model 'T's, but nearby Downs Motor Transport Company of Angmering-on-Sea, had two Model 'T's which had been altered by the American firm of Fairbanks of Fulham. The modifications included removing the rear wheels and fitting sprockets, extending the chassis with a Baico unit to make it three times its former length and, finally, the addition of chain-driven rear wheels.

As well as spending pleasant evenings listening to tales of times before one was born, you can, if you are that way inclined, construct models of some of these ancient vehicles. At the moment, there is an enthusiast in Portsmouth who is doing just this for the new Arundel Museum, which has a section devoted to buses and coaches.

A French Latil operated by Silver Queen of Watergate in the late 1920's.

A Daimler char-a-banc operated by Norris Bros. of Littlehampton about 1920.

by **F. Judd A.Inst.E.**

# Build A SIMPLE Radio

IN the early days of radio the construction of a receiver rarely called for a soldering iron since components such as capacitors, resistors, coils and valveholders, etc., were fitted with small terminals to which connections could be made. With the event of the transistor, radio components have become much smaller and screw connecting terminals have been completely abandoned. This means that all connections have to be soldered, but I hasten to add that with a little practice the soldering together of two wires or a wire to a solder tag can be carried out very quickly indeed.

First you must use the right kind of soldering iron, a 'pencil bit' type like the one I mentioned last month and resin-cored solder. Ask for 'multi-core' solder which can be obtained from most electrical shops and ironmongers.

Being electrically heated, a pencil-bit soldering iron will maintain constant heat; just the right amount for melting the solder, but it is most important to keep the tip of the iron well 'tinned" and clean. Very light filing will take care of this.

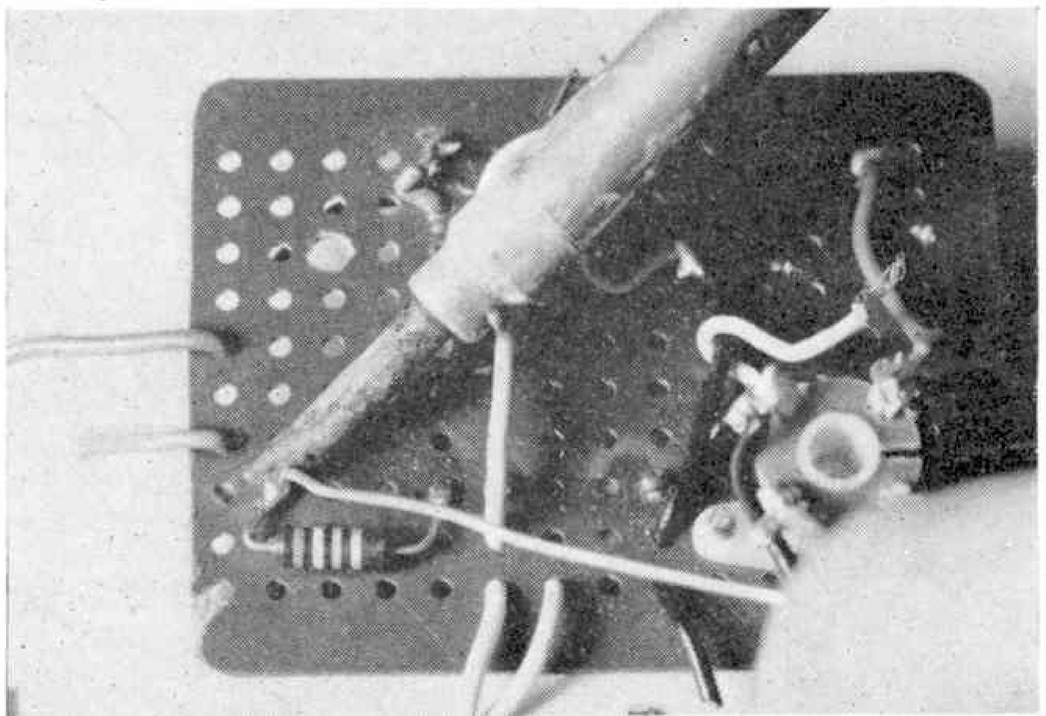
## Soldering

The rule for successful soldering is simple—bring the iron and solder together on the work at the same time—the moment the solder runs remove the iron and the solder together, leaving the joint to set. Take care not to move the work until the solder sets or you may end up with a dry joint which will make poor contact.

First practice soldering with odd bits of wire and take the precaution of 'tinning' each wire before you make the join. Tinning means giving the wire a thin coat of solder before the join is made and to do this you run molten solder on to the wire. If a solder tag or wire is dirty or oxidised, clean it by scraping until the metal shows bright and then tin it before making an actual join. The art of soldering is not difficult but do practice before you attempt connecting up radio components, especially transistors.

Radio and electronic circuits are not difficult to read once you are familiar with the 'symbols'. Therefore, each month, I will introduce some radio components and their circuit

To solder, simply touch the flux-cored solder against the part to be soldered with the hot soldering iron. Remove both and allow join to cool.



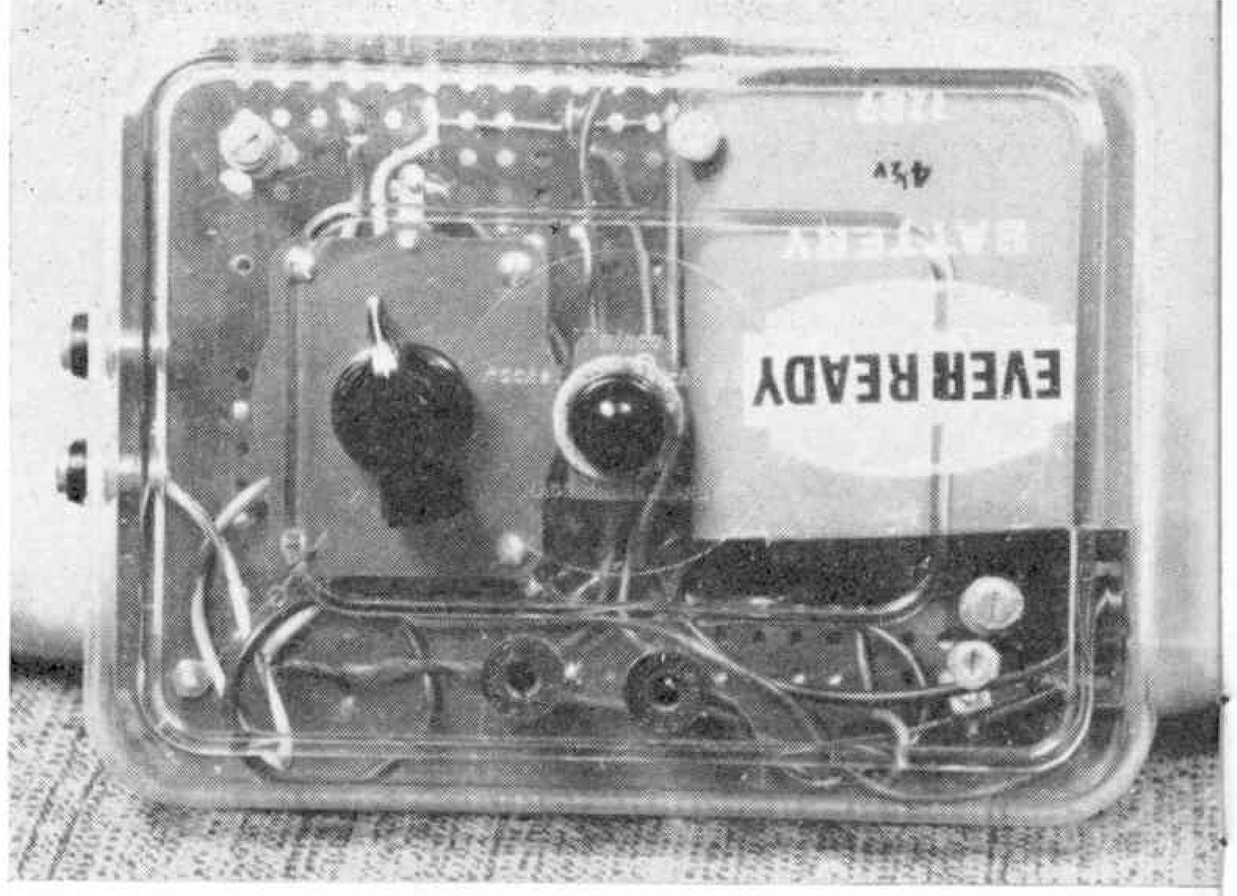



Fig. 6. The completed two transistor radio receiver seen clearly inside the plastic lunch box.

symbols. The symbolised or theoretical circuit for a two transistor radio is shown in Fig. 1. Study this and see if you can identify the components with the pictorial wiring diagram in Fig. 2. It is important to understand these diagrams for they are a standardised way of presenting circuits and the symbols are always the same.

## A Two Transistor Radio

The two transistor radio can be built into a small plastic lunch box (from Woolworths), about 5½ by 4½ in., or can be a little larger if you wish. As these plastic boxes are brittle, be careful about drilling holes. The 'chassis' on to which the components are assembled is a 'paxolin' eyelet board, which is an insulating material, punched all over with evenly spaced small holes. These are now used a good deal for assembling transistor circuits.

Before assembly, carefully check and identify each component and become familiar with the connections to the transistors which are shown separately in Fig. 5. This is most important as a wrong connection can destroy a transistor instantly. Make absolutely sure you identify the *collector connection* (C) which is adjacent to the 'red spot'. All transistors are marked this way.

Note also the 'polarity' of the 8mFd. electrolytic capacitors. One end will be marked + or coloured red to identify the positive connection. Last but not least comes the connections to the 4½ volt battery. Make sure these are correct, as shown in Fig. 4. You can solder the battery leads direct to the brass strips—long strip negative—short strip positive. *Remember that if the battery is connected the wrong way round, accidentally or otherwise, you may instantly destroy the transistors.*

The paxolin eyelet board can be obtained from R. E. Lamb, 17 Queen's Road, Leytonstone, London, E.11. You need a large board which is about 6 by 5 in. and can be trimmed down to fit into the plastic box as shown in Fig. 7. The tuning capacitor and the push button on/off switch are mounted directly on the base of the plastic box. The lid of the box becomes the back or underside. The headphones and aerial and earth sockets are mounted on the sides of the box. The headphone sockets may be mounted beneath the on/off switch on the front as shown in Fig. 6 if desired.

## The Ferrite Tuning Coil

This component has to be wound and consists of a ⅜ in. diameter ferrite rod about 4½ in. long. These vary slightly in length, but should not be larger than 5 in. First make a thin cardboard tube that will fit snugly over the rod, leaving about ½ in. of the rod protruding at each end. The coils L1 and L2 are wound on this tube with both windings in the same direction, i.e. if you start L1 in a clockwise direction, L2 must also be wound in the same direction. The turns of wire should be fairly tight and close up to each other. Leave about ½ in. of space between the end of L1 and the beginning of L2. Each coil is wound with 30 standard gauge enamelled wire. Leave about three or four inches of wire each end for connection and carefully scrape off the enamel at the ends ready for

soldering. If you feel that winding a coil like this is too difficult, although it is not really, you can obtain a coil ready wound from Stern-Clyne Radio (see components list). The connections for it are shown in Fig. 8. The coil and its ferrite rod are mounted on two tinplate clips, one each end which are bolted to the paxolin eyelet board (see photographs).

## Testing the Receiver

Before connecting the battery, check most carefully every connection and each component, especially the transistors. When you are satisfied that there are no errors in the wiring etc., connect up the battery and switch on. You will, of course, need an aerial so this should be ready too. It may consist of about 20 ft. of thin, plastic-covered wire hung round the picture rail or temporarily suspended across the room. You should be able to receive the local, medium-wave B.B.C. Home and Light programmes at comfortable headphone strength.

If reception seems weak, you may need an earth connection which should be made to the nearest copper or lead water pipe or to a copper earth spike in the ground. *Do not under any circumstances connect to the electric light mains earthing system.*

Remember that reception will depend entirely on the distance you are from the nearest B.B.C. transmitter and the receiver may not work satisfactorily in remote parts of the country, especially where it is very hilly. After all, it is just about the most simple radio receiver you could build and naturally it cannot compete with a highly sensitive superhet radio.

Current consumption is only 5 milli-amps so the battery should give many hours of life before having to be renewed.

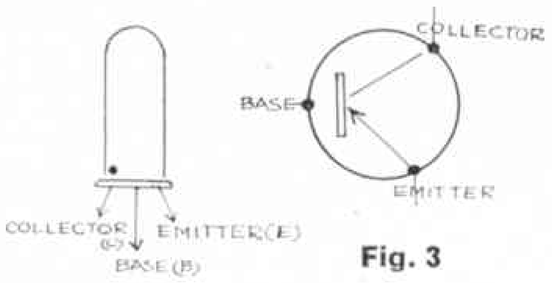



Fig. 3

Connections and circuit symbol of a transistor.

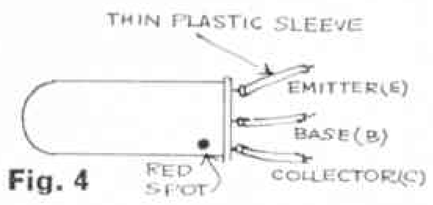



Fig. 4

Do not cut plastic covered wires on the transistor.

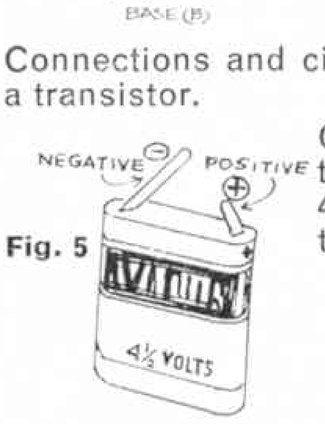



Fig. 5

Connections to a standard 4½ volt battery.

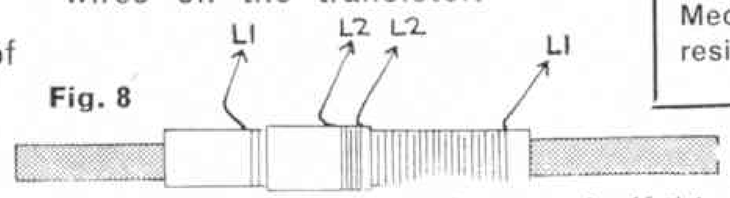
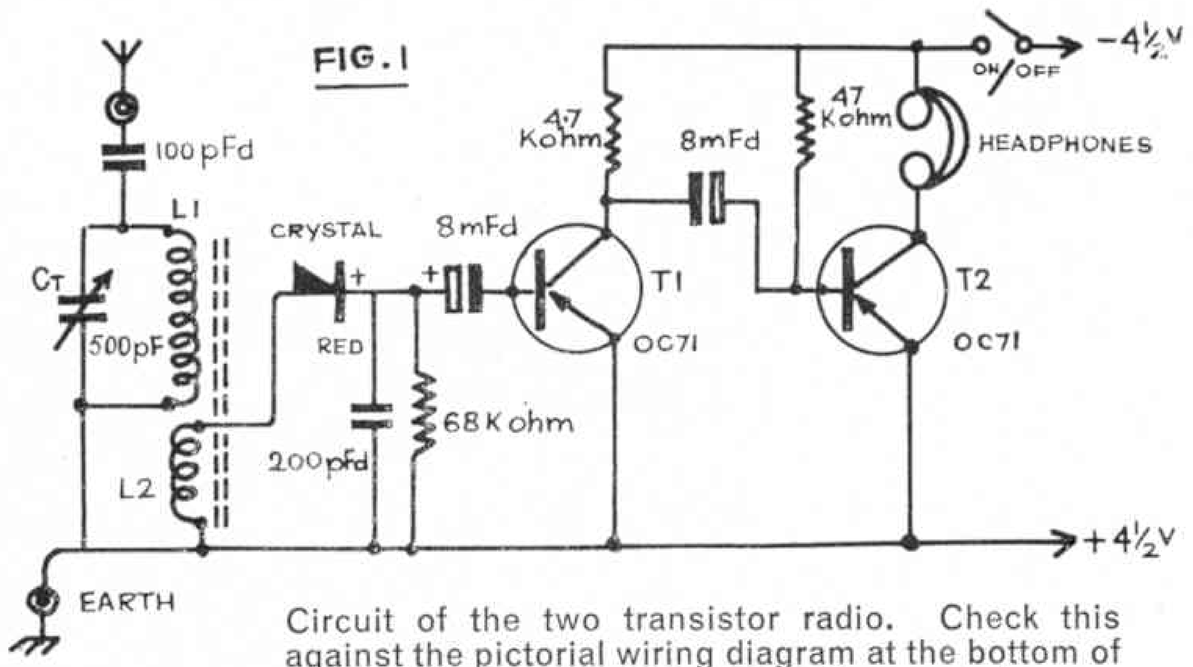



Fig. 8

Stern-Clyne ferrite coil ready wound. If this is used the tuning capacitor must be 100pFd.

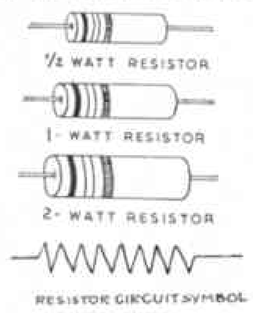



Circuit of the two transistor radio. Check this against the pictorial wiring diagram at the bottom of the page to learn the meaning of the symbols.

## Radio Components—The Resistor

The ability of a conductor to restrict the flow of electric current is called its *resistance*. Resistors are used in all radio and electronic circuits to control current flowing in different parts of a circuit. The most commonly used types are made from special carbon and are colour coded to denote the value. Resistors come in all values from one ohm to ten million ohms or more. Prefixes are used to abbreviate the larger values for example, a 1,000 ohm resistor would be designated 'one Kilo-ohm' or 1 K.ohm'. A 1,000,000 ohm resistor would be 1 Megohm or 1 M.ohm. Resistors are also rated as to the power they can dissipate and those used in radio are commonly ¼-watt, ½-watt and 1-watt rating.

The colour code used to denote the value usually consists of three coloured rings at one end. Like those shown in the diagram they are read from left to right. For example a resistor with yellow, mauve and orange rings, in that order would have a value of 47,000 ohms or 47 K.ohms. If the rings were yellow, mauve and red, the value would be 4700 ohms or 4.7 K. ohms. Both these values will be found in the two transistor radio circuit in this issue of Meccano Magazine. Next month, the full resistor colour code.




## Components List

All the components can be obtained from the various branches of Stern-Clyne Radio Limited or by post from their main branch at 3/5 Eden Grove, Holloway, London, N.7.

Transistors—2 Mullard OC71

Crystal Diode.

Ferrite Rod.

4 sockets—(Headphones, Aerial and Earth).

1 100pFd (pico-Farad) mica capacitor.

1 200pFd ditto.

2 8mFd (micro-Farad) electrolytic capacitors 6-12v. wkg.

1 4.7 K.ohm (kilo-ohms) resistor ¼-watt.

1 47 K.ohm resistor ¼-watt.

1 68 K.ohm resistor ¼-watt.

4½ volt battery—Vidor V5 or Ever-Ready 1298 (any electrical shop). ON/OFF switch, table lamp, press-button type (any electrical shop). Plastic box, Woolworth's lunch box. Headphones, 2000 ohm type (Stern-Clyne Radio) 14s. 6d.

The approximate cost of the components will be about 30s. (not including the headphones). The tuning coil ready wound complete with ferrite rod can be obtained from Stern-Clyne Limited, address as above (Price 5s.).

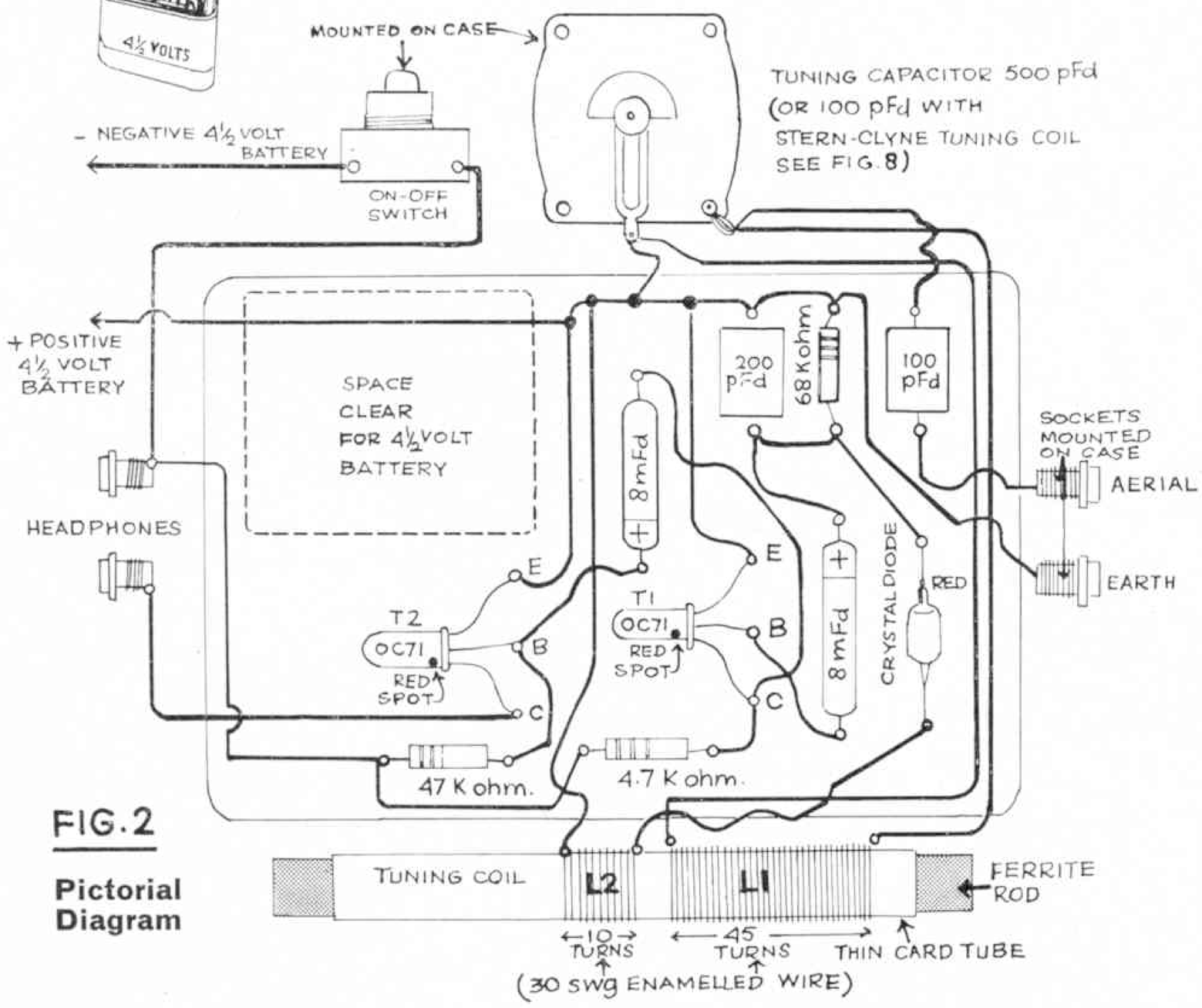
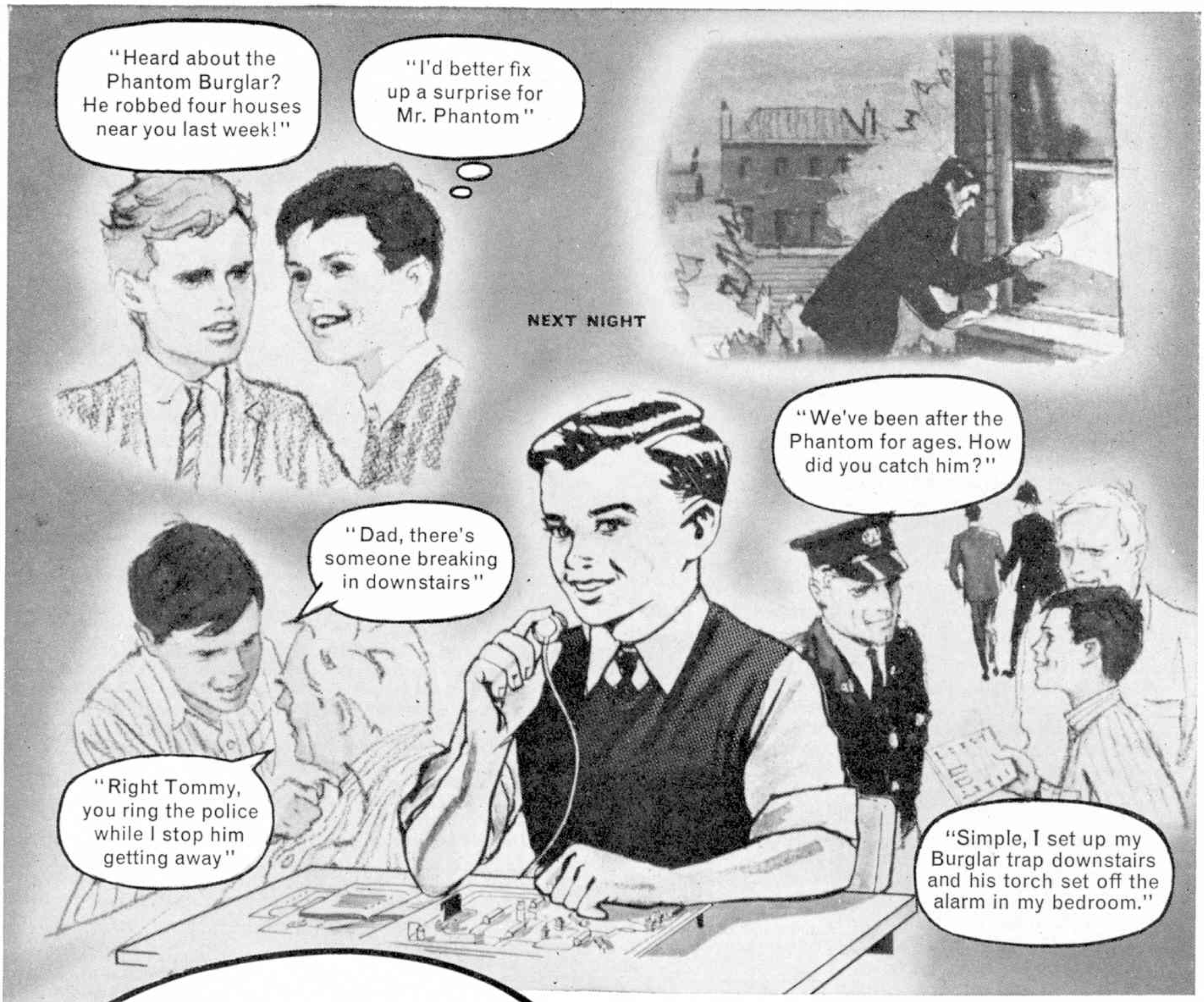



FIG. 2

**Pictorial Diagram**


"Heard about the Phantom Burglar? He robbed four houses near you last week!"
"I'd better fix up a surprise for Mr. Phantom"
NEXT NIGHT
"We've been after the Phantom for ages. How did you catch him?"
"Dad, there's someone breaking in downstairs"
"Right Tommy, you ring the police while I stop him getting away"
"Simple, I set up my Burglar trap downstairs and his torch set off the alarm in my bedroom."

# 8 SUPER CIRCUITS FROM 1 KIT!

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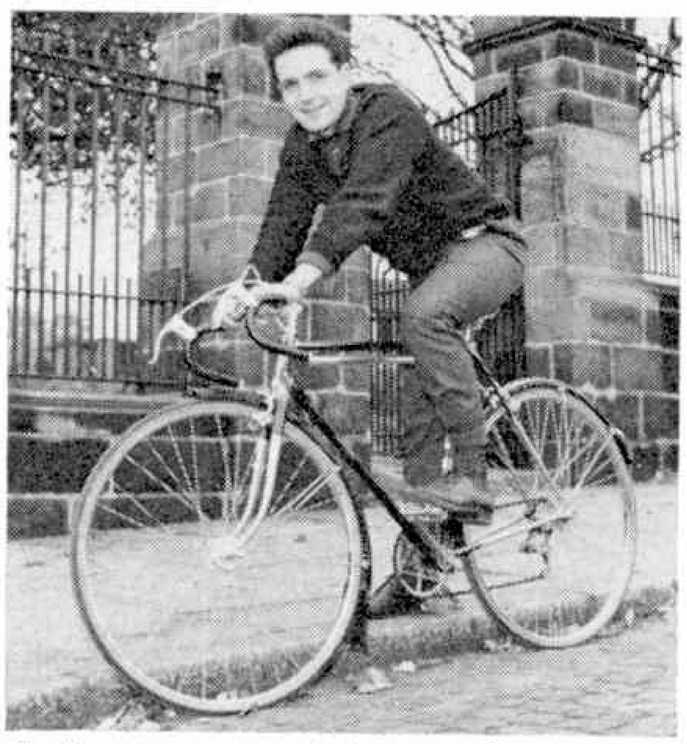
**Electronic Engineer**

**Meccano Magazine SPECIAL NOTICES**

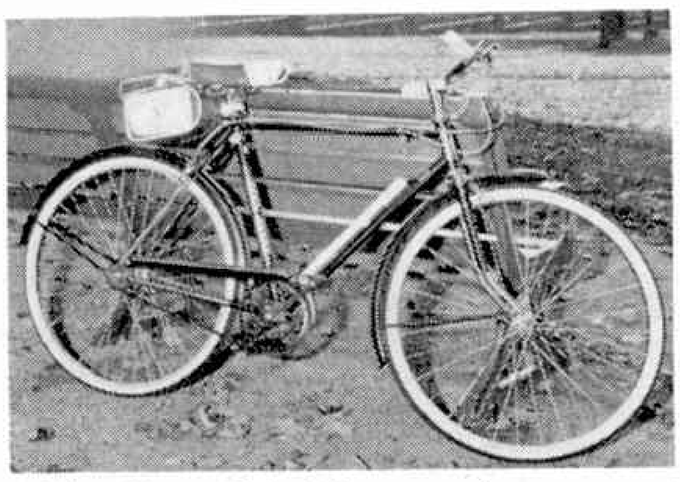
# BIKES! BIKES! BIKES!

**If you are thinking of buying a bike, new or second-hand, then read this extra-special, eight-page supplement. Full details of how to buy and adjust a bike to fit, information about accessories available, plus useful hints and tips on correct maintenance of your machine are featured . . .**

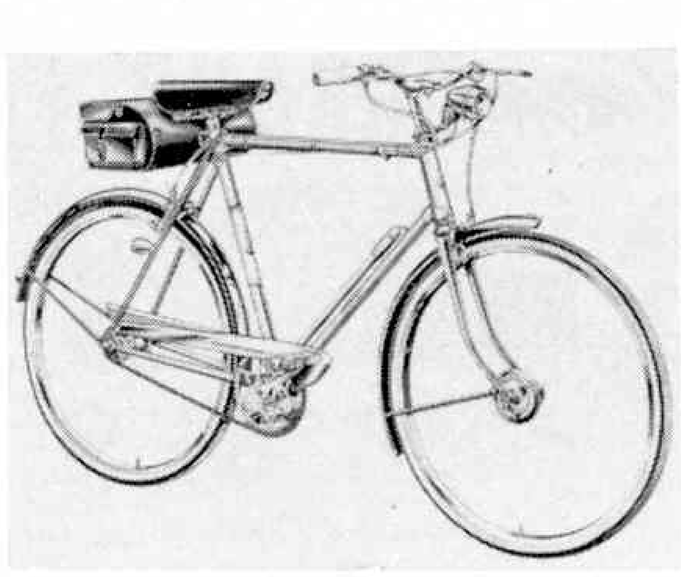
Moulton is the latest, exciting design in bicycles. Their small wheels and rubber suspension, plus frames which are adjustable from 19½ to 25 inches make them revolutionary machines. Prices begin at £26 9s 6d and models are available in sports, touring or roadster trim.



Carlton are manufacturers of very smart sports bicycles such as the one shown—the 'Constellation' CTL. This model has a 5-speed Allvit gear and lightweight frame. Prices in the range vary from £25 7s 9d to £59 14s 9d.

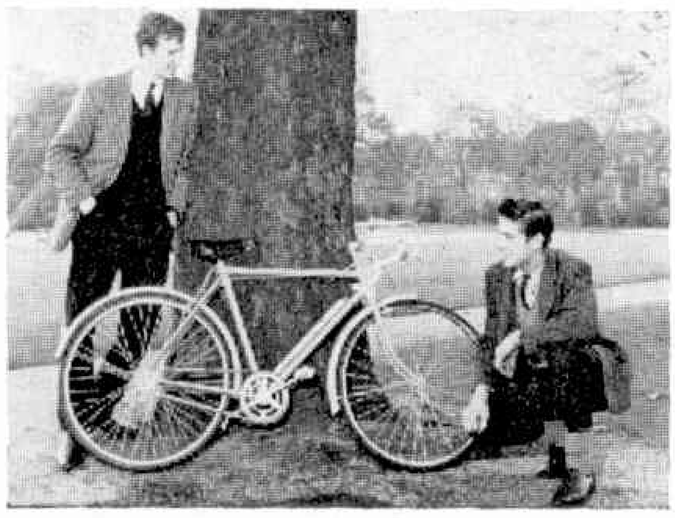


The 'Star Rider' is one of a range of 10 B.S.A. models produced by Raleigh Industries. The models vary from the junior Starlet at £14 10s 6d to the Safety Shopper at £28 7s 6d. The 'Star Rider' shown has a three-speed Sturmey-Archer rear hub and costs £23 9s 6d.



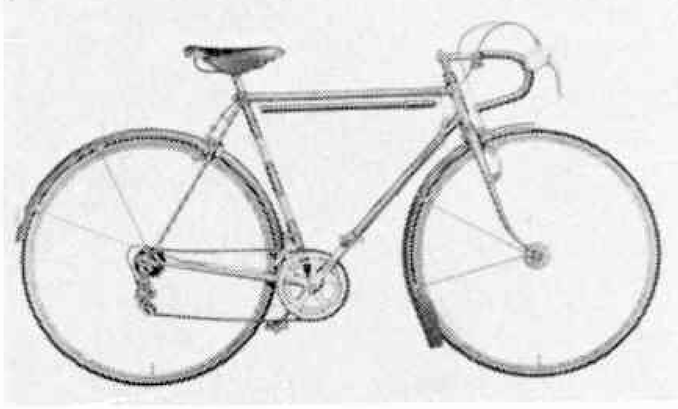
The Raleigh 'Boulevard Tourist' shown here has a three-speed S/A rear hub and Dynohub lighting. In this form the machine costs £26 17s 6d although a model without lighting is available for £23 17s 6d.

The Triumph 'Sportsmaster' is a sports bike in the lower price range of machines of this type. The model shown is fitted with caliper brakes and a 3-speed gear as standard and costs £17 9s 6d.

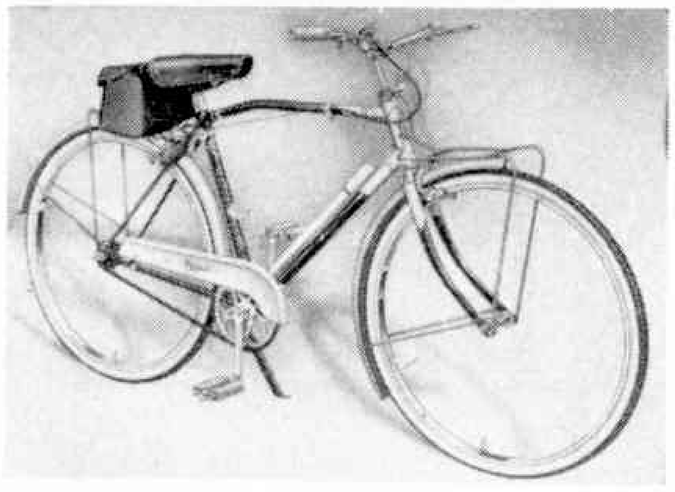


The Raleigh 'Explorer' is a junior bicycle which is available with single or three-speed gearing. Caliper or roller brakes are also optional. In its various forms, the 'Explorer' costs between £14 10s 6d and £21 11s 10d.

Wearwell Model 64B is suitable for boys of 11 years of age and over. The model has a 5-speed Benelux gear, plus accessories including saddle bag and pump. This sports model is very reasonably priced at £20 5s 0d.



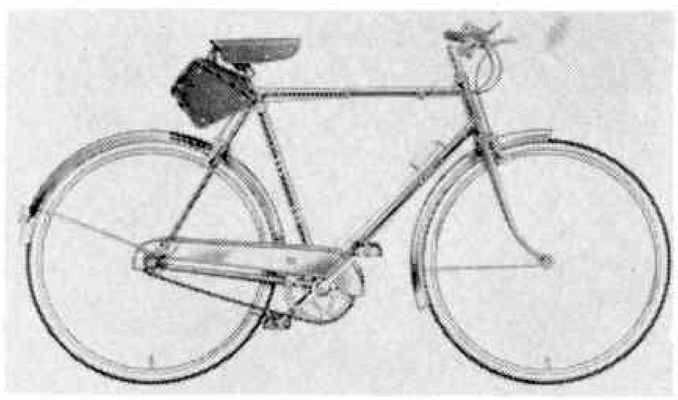
Viking is a famous name in the competition world and their sports machines are well-designed. This Conquest Model C.10 has a 10-speed gear and special lightweight frame. A complete range of sports and competition machines are available from Viking. This model costs £27 2s 6d.



Another model in the Wearwell range is No. 59 Sports which has a 19½ inch frame and 26 by 1⅜ inch wheels. Costs £19 7s 6d.

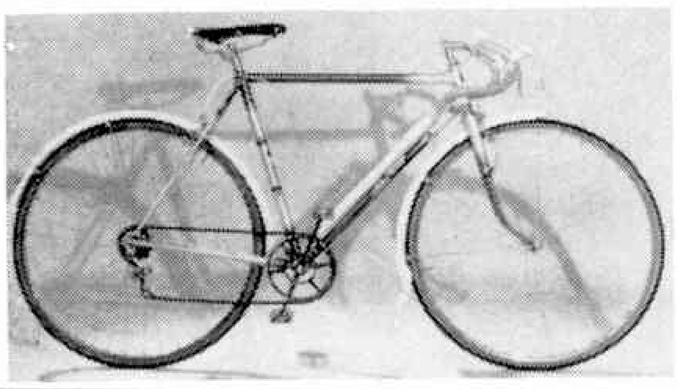
The Falcon Model 80 'San Remo' has an Italian design frame with 27 inch wheels. Various frame sizes are available from 21 to 24 inches and the model shown, with a 5-speed gear, costs £35 4s 6d.

The C.W.S. Flash Model 32 has an 18 inch frame and a 3-speed gear. The price is £20 15s 0d.



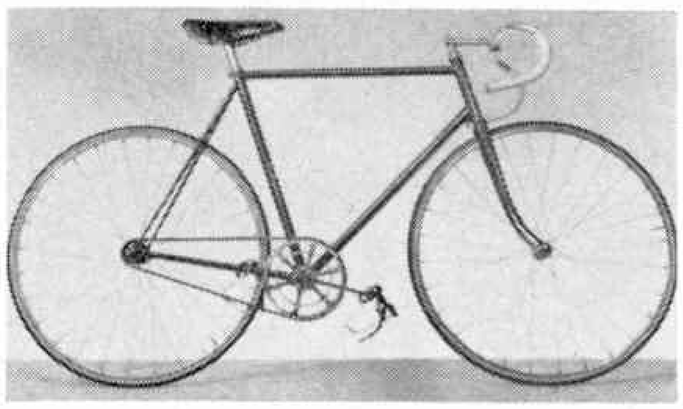
The Viking Popular Model S3/AW has caliper brakes and a Sturmey-Archer 3-speed gear. Cost £19 19s 0d.

Coventry Eagle Model 16 is ideal for the younger rider. It has an 18 inch frame and 24 inch wheels. Tool bag and pump are included in cost, £16 19s 6d.



Jack Taylor Cycles is another specialist in track, sports and tandem models although, as can be seen, a number of road bikes are also made. This sports model costs £26 15s 4d.

This track bike by Mercian Cycles is only for racing and the company are really specialists in frame building, to which you add your own wheels, brakes, etc. This frame costs £17 18s 0d. Road frames £12 6s 3d.

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Here's a wonderful opportunity for you to win the best of all bicycles for Christmas — a magnificent ROYAL ENFIELD presented FREE by the manufacturers! Precision engineered with a top quality specification and most attractively finished, your ROYAL ENFIELD will give you many years of perfect pleasure, and it's a machine you'll be really proud to own. Call in your Cycle Shop and get a preview of the superb ROYAL ENFIELD range NOW!

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| 10 | E | | | | | | |
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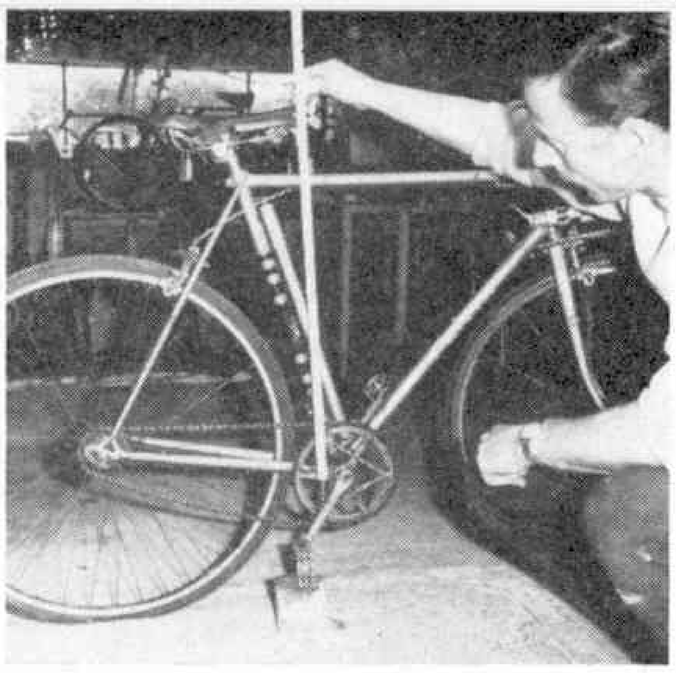


# Suit and Fit your Bike

BUYING a new bike is a simple matter but choosing wisely is not so easy. When faced with a bewildering array of gleaming new machines and listening to a salesman, who is probably prejudiced anyway, one can make a mistake and buy a cycle which is not quite the best machine for the job.

The job is really the most important thing. How are you going to use your bike? Is it to ride to work or school? Are you going to use it for touring or camping? Do you want to join a club and perhaps even start racing? There are different machines made and equipped for all of these purposes.

If you are still at school and it is for this journey that you intend using your bike, get something sturdy that will stand up to all the manhandling and rough treatment it is likely to receive. Perhaps you earn your pocket money by delivering papers—here again you need something that will withstand being bumped up and down kerbs.

With this type of machine you will also have much less maintenance. Heavy tyres do not wear out so easily and roadster wheels will not buckle when you hit the kerb by accident. Having a choice of ten gears may be fine to show off to your friends, but you won't be riding in the Tour de France, so you're not likely to need any more than three! A hub gear is probably best.

Don't buy a machine that's too big! Riding like this causes accidents!

## The Touring Machine

If you've decided that you'd like to take up cycle touring, you will need the right cycle if you are going to travel far and enjoy your riding as well as the places you visit.

You don't want your week-end ride spoiled by mechanical trouble, so you will have to maintain your bike carefully and treat it well. Therefore, in spite of the hard job the machine will be doing, a lightweight frame is the best thing. However, do make sure that you get one with shallow angles and a fairly long wheelbase. About a 71 degree head angle and seat tube angle, with a 42-43 inch wheelbase.

Accessories are a matter of personal choice. Generally speaking you will need strong wheels of the Endrick type, cable brakes, possibly of the hub variety and a variable gear. The type of saddle and handlebars are a matter for the individual, but a comfortable position is an essential if you are to spend long, enjoyable hours in the saddle. A reliable lighting set is an advantage and a large saddlebag is an essential.

For the chap who intends camping, there is no possible alternative to pannier bags for carrying his equipment. Never consider carrying it on your back—you'll live to regret it if you do!

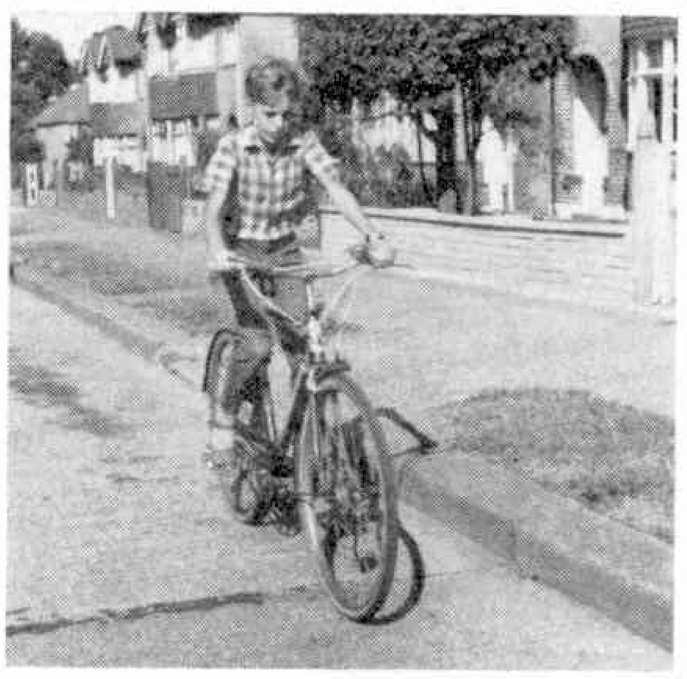
Saddle and handlebars out of adjustment can also be very dangerous!

## The Clubman's Lightweight

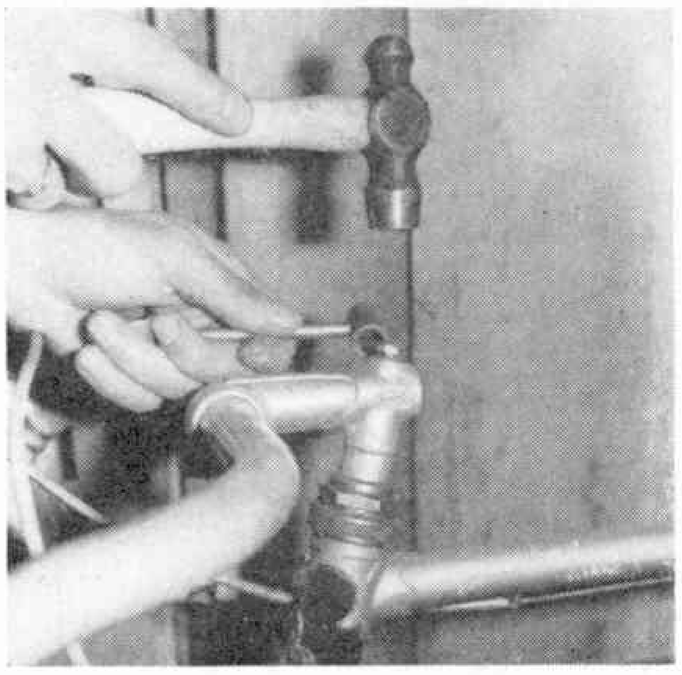
You'll find that most clubmen have their machines made up to suit their own requirements but this is by no means essential, unless you are exceptionally tall or extremely small. What is essential though is to get a machine that is the right size. Measure the inside length of your leg—say 31 inches, deduct 10 inches to allow for length of crank and height of saddle and saddle pillar and you will have the frame size—21 inches. This is measured from the centre of the bottom bracket spindle, up the seat tube to the top of the frame lug under the saddle. If you are in any doubt, get the frame half an inch too small rather than too large.

Ensure that the frame will accept 27 inch wheels—these are used almost universally in the club world. Frame angles are usually 72 degrees parallel, i.e. head and seat tube are both 72 degrees to the horizontal. An alternative is a 73 degree head and a 71 degree seat tube. Wheelbase will be 40-41 inches. For general riding, high pressure 27 inch × $1\frac{1}{4}$ inch tyres will be used.

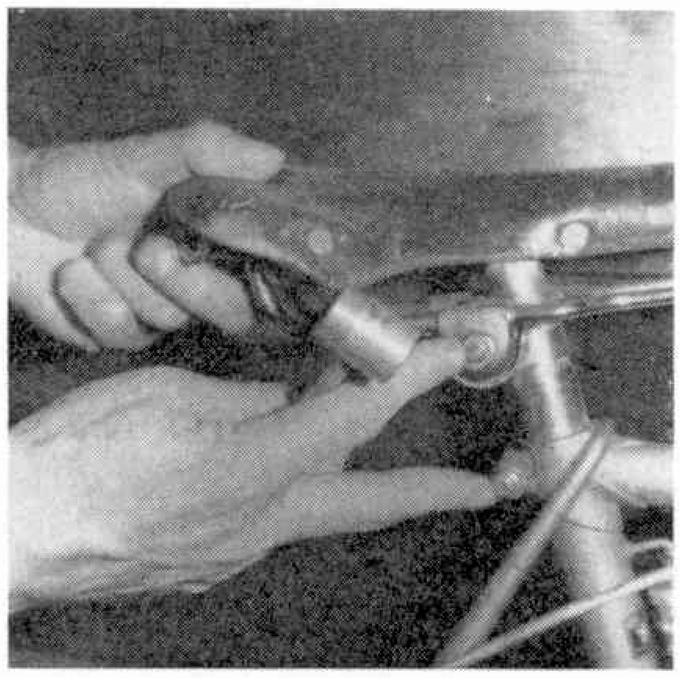
A huge array of accessories is available, but the clubman is a pretty conservative chap. If you are thinking of joining a club, take a trip down the clubroom first and find out what sort of equipment is being used. You can't fool these clubmen—they only use equipment which they've proved is good! Even more to the point, it is the right sort of equipment for the clubman's type of riding.



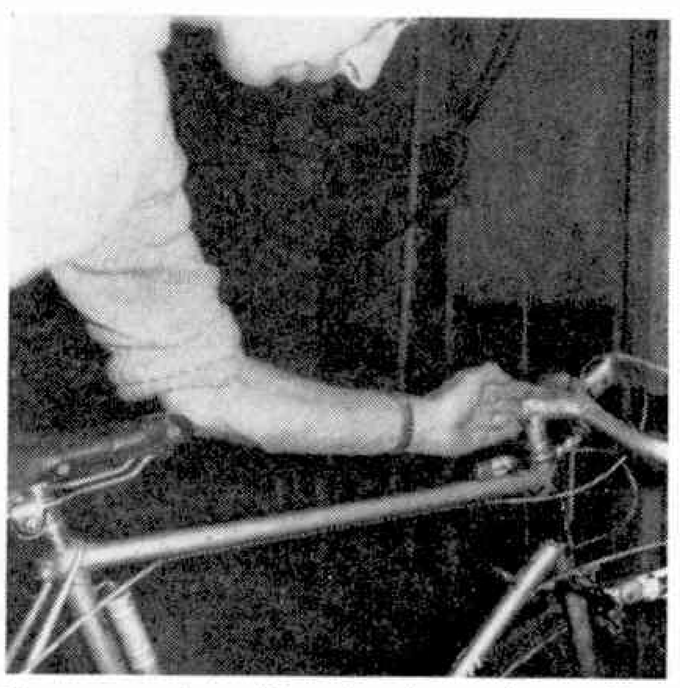
The correct riding position shown here is both comfortable and safe.



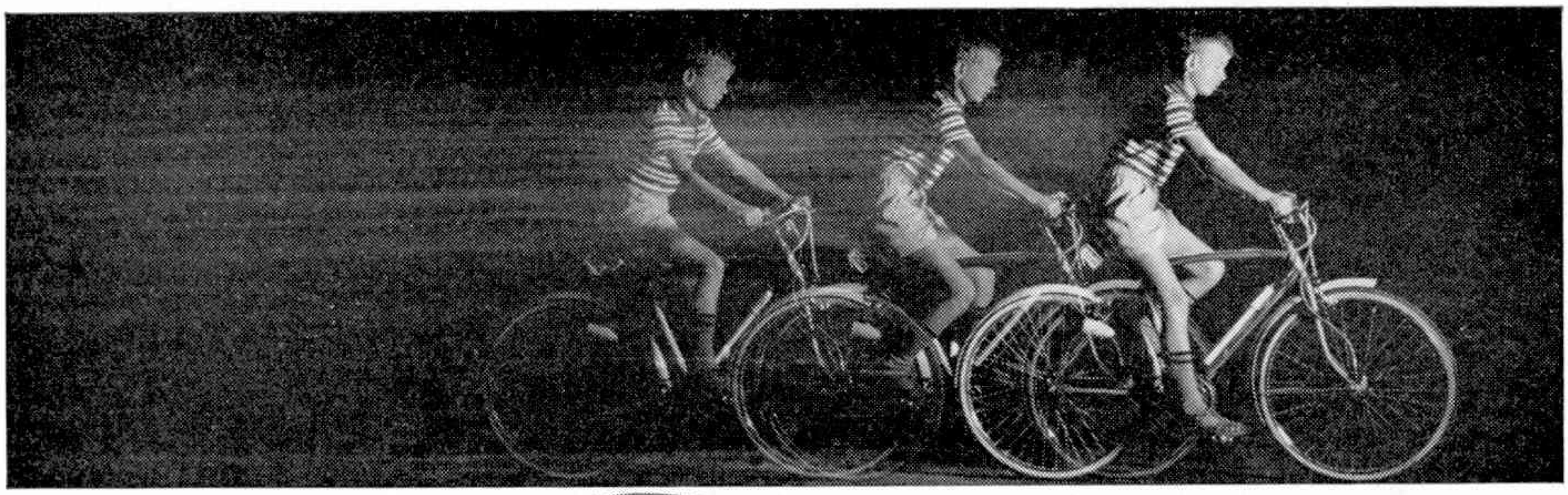
Unscrew expander bolt, tap it free and adjust handlebars for comfort.



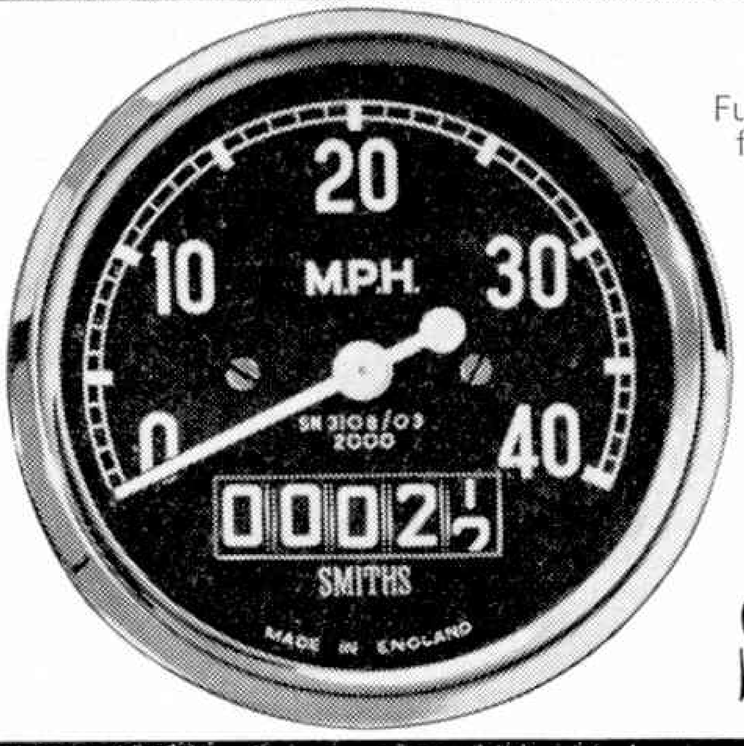
The saddle can be adjusted both for height and position with bolts shown.



The correct position is shown here. Bars should be at finger tip length.



# IT'S THE NEXT BEST THING TO AN ENGINE!




Funny how a speedo makes riding a bike easier and more fun. It's great to know what speed you're doing, and you feel as though you're riding more than just an ordinary bicycle. A SMITHS cycle speedometer tells you your speed accurately up to 40 m.p.h., records the miles you travel too. SMITHS speedos don't cost a lot—you could soon save the 47/6 from your pocket money, or . . . what about a hint to Dad, now that Christmas isn't far away.

Make sure *you* equip your bike with the next best thing to an engine—a SMITHS cycle speedometer, from any branch of Halfords and most other good cycle stores.

**SMITHS** MOTOR ACCESSORY DIVISION
OXGATE LANE, LONDON N.W.2

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**Good Show!**

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# BUYING SECOND-HAND

WHEN you buy a second-hand bicycle you don't get a guarantee! Therefore, it is a very good idea to give the machine a thorough check over before parting with any money. The seller may not deliberately try to cheat you but it is wise to learn about the machine's faults—if there are any.

First check the frame, for it is the most expensive item and faults here are the most difficult to repair. A cycle that has been in a serious crash is quite likely to have a twisted frame. The best way to test this is to line the front wheel up and check by eye. If you get the sort of view as in Fig. 1, don't buy the machine!

Another good test for frame twist is to wet the tyres in a puddle and run the bike along in a straight line. The rear tyre track should follow that of the front. A badly twisted frame will also put the machine off balance when it is being ridden.

If the bike has had a head-on collision in the past, two effects may be noticeable. First, the forks may be bent back and second, there may be a hump in the top tube just behind the steering head (Fig. 2).

Have a good look too at the state of the enamel. A frame that is heavily re-touched is immediately suspect. A bit of worn enamel behind the seat stays means nothing, but serious chipping along the chainstays merits a closer inspection. The rear fork ends could also be checked at the same time. If the chain has jumped off and jammed, severe damage could have occurred. Similarly, using hubs of the wrong width might have caused fork end distortion. Look underneath the tubes for hidden rust.

## The Wheels

The state of the chrome is one of the main points to check. It will probably have been cleaned up for the sale, so look closely for fine scratching. This could mean rusty rims as soon as it rains.

Always spin the wheels to find out if they are true. A slight buckle is probably unimportant, but a sharp kink means that the rim has sprung and a new one will soon be necessary. Note the condition of the tyres. The bike may be sound, but the price of new tyres will make a difference to the price you are willing to pay.

It is worth checking the chainwheel pretty closely for a machine equipped as shown below, with double chainring and derailleur gears, would require expensive replacements. Check to see if the pins in the chainset are present and whether they have been left loose. Also check the shape of the teeth. If they are hook shaped, you will soon need a new chainring. The same test should be applied to the rear sprocket or sprockets.

Next, ride the machine and try it in every gear. A badly aligned gearchange mechanism is almost certainly damaged. Also, a slipping drive with a hub gear immediately renders this suspect.

## Bearings Check

Try all the bearings on the bike for shake—that is sideways movement. Check that both wheels are free to turn and not loose. Make the same check on the bottom bracket. Loose and badly adjusted head bearings can be spotted as shown in photograph. Hold the front brake on and rock the machine forwards and back. Movement in the head bearings will immediately be felt at the handlebars. Don't confuse this, however, with a loose front brake.

Brakes should, of course, be checked but there is little here that cannot be remedied at the cost of a few shillings. The cost of a new saddle though is a different proposition. A really neglected saddle will mean an expensive replacement. Look for serious sagging and loose or lost rivets.

Finally, ride the machine and make sure all works smoothly and easily and there is no noise. Then check that all the accessories — lamps, mudguards, pump, bell and saddlebag are present and correct. They all cost money to buy. When you have decided that the machine is as near perfect as you would like, then is the time to think about the cost!

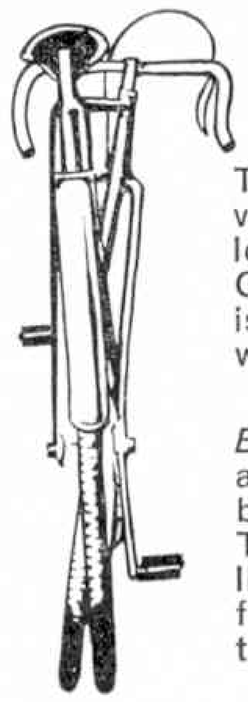


**Fig. 1**

This is an exaggerated view of how a machine will look with a twisted frame. Check that the distortion is not due to an off-centre wheel.

*Below:* A bike that has hit a wall head on is going to be bent somewhere. These are the two most likely places. The front forks and the front end of top tube.

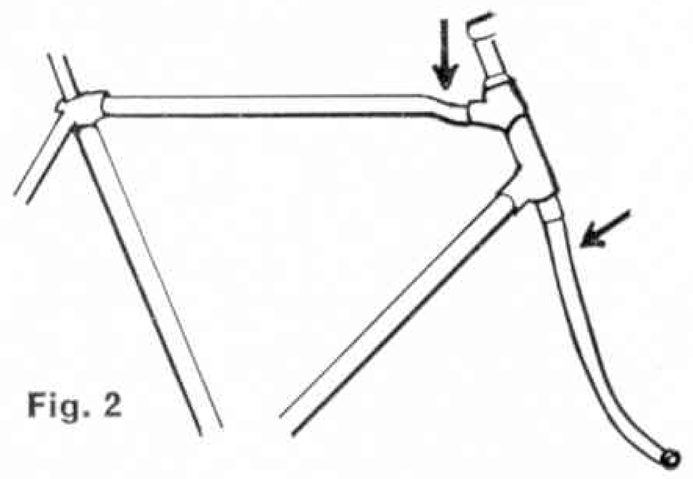
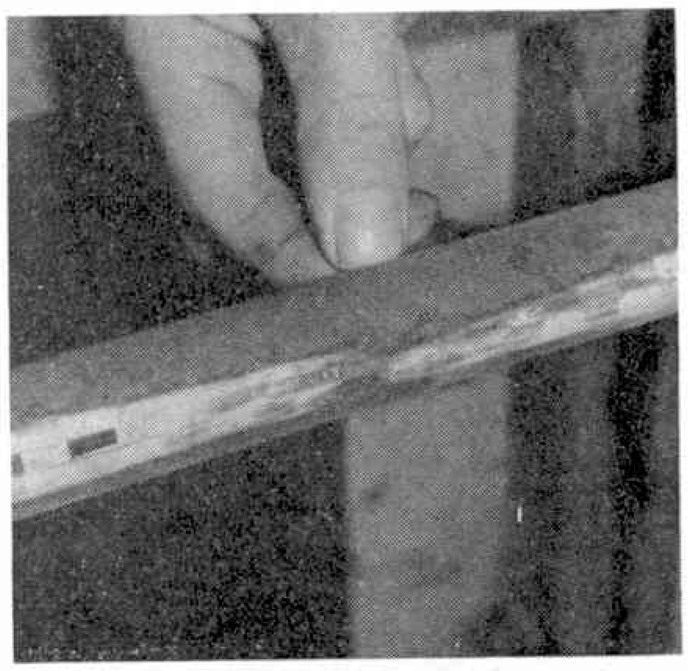
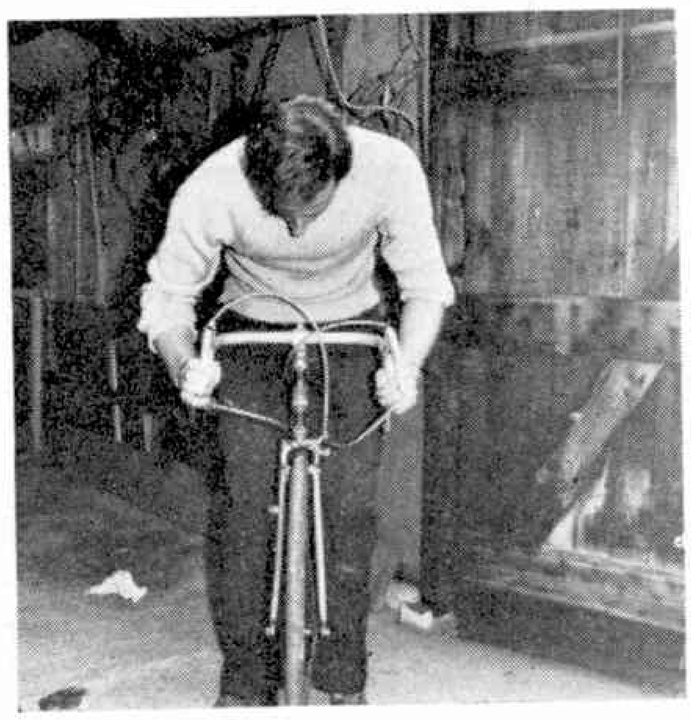


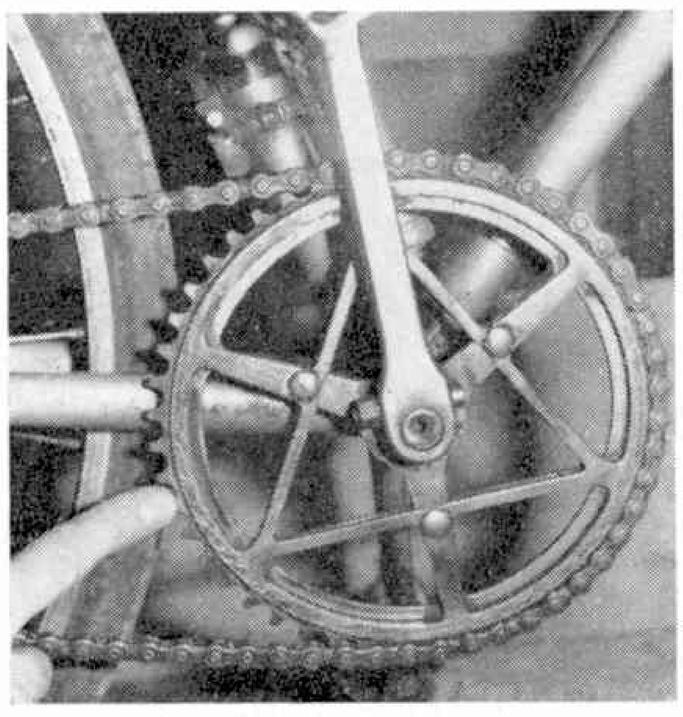
**Fig. 2**



Look along the underside of the frame tubes for rust or severely pitted tubing painted over. Always suspect the surface beneath sticky tape—it may be damaged.



The steering head can be checked by applying the brakes and rocking the bike forwards. There should be no movement.



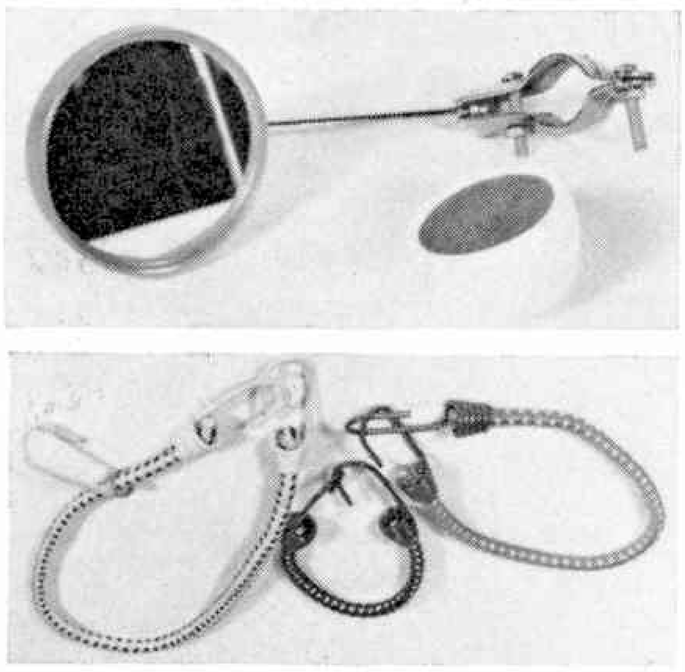
Oval chain rings, missing or worn pins, hooked teeth or distorted gearchange units can mean early, expensive replacements.

Finally, spin the wheels to check for any buckles. Slight ones may be corrected, but take care when spokes are missing.

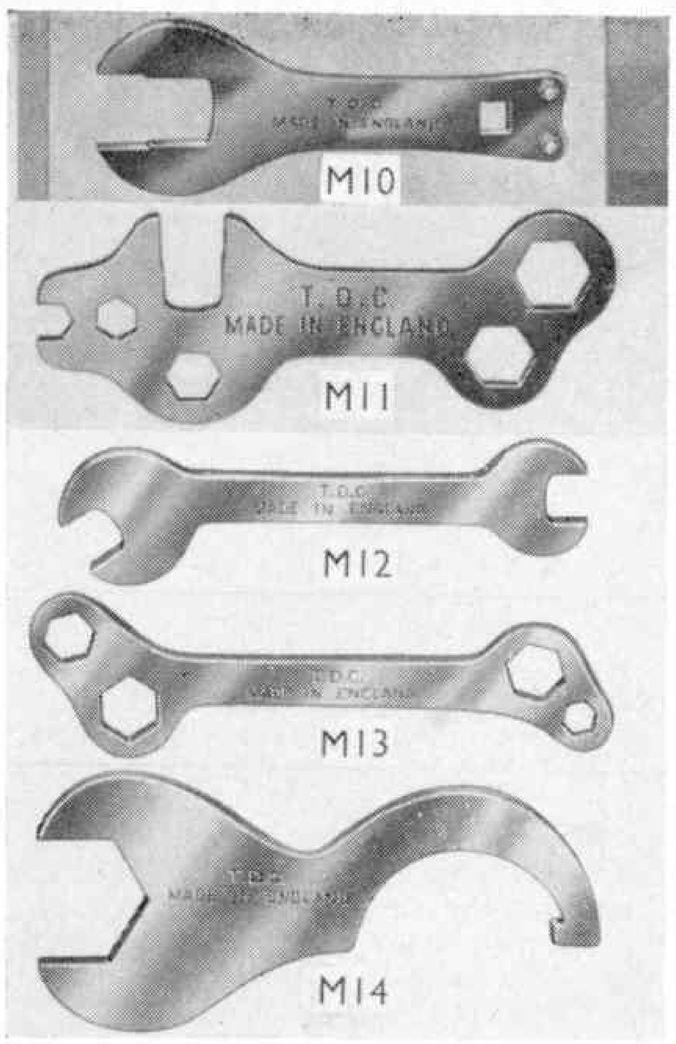
# ACCESSORIES & SPARES

Here is a selection of items, some of which are essential to the cyclist's toolkit; others are of value when improving the appearance or safety of your machine or when carrying out necessary repairs. Unfortunately, there is not enough space available to carry a larger display and we suggest that you visit your nearest cycle shop, where a large number of other useful accessories may be seen.

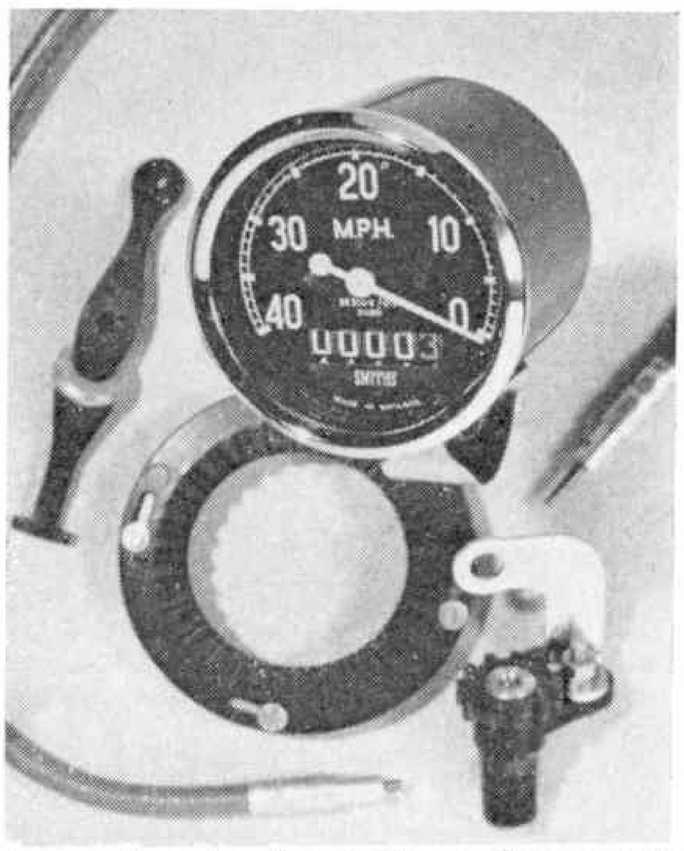
An essential part of any cyclist's toolkit—the puncture outfit. This cold vulcanising Cure-C-Cure outfit by Romac costs 1s 6d. Romac also supply a light cycle oil.



The Stadium Model 92 round cycle mirror is available in white, red or blue, price 4s 3d. The Belvin cycle reflector, also by Stadium, costs 1s 3d. Belvin luggage elastics cost 1s 6d, 2s 0d and 2s 6d.

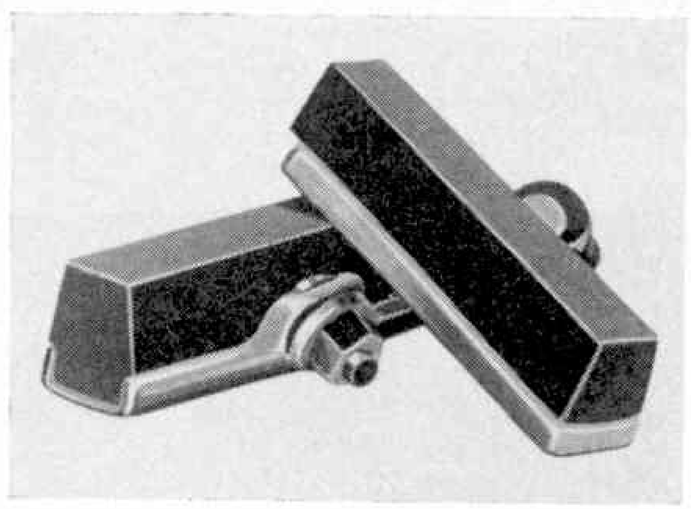



A full range of spanners to fit every nut and bolt on your bike is essential. This set by T. D. Cross costs, with exception of M14 and M11, 1s 0d each. These two cost 1s 3d.

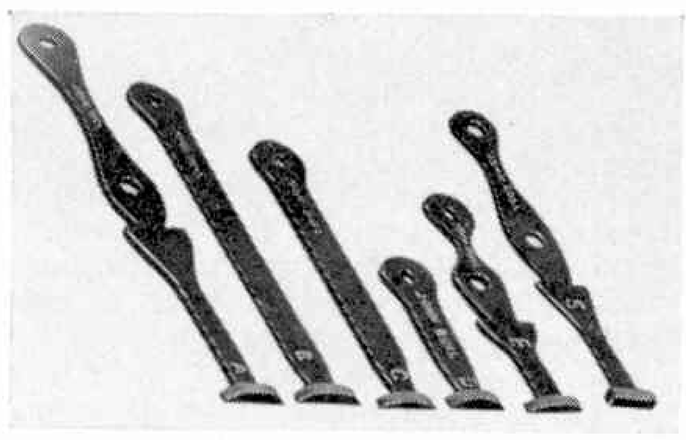



A speedometer for cycles makes a very useful accessory for your machine. This Smiths unit gives accurate speed readings up to 40 m.p.h. and records distances in 1/10ths of a mile up to 9,999 miles. Full instructions are supplied for easy fitting and the kit costs £2 7s 6d.

Another essential part of the toolkit is a strong set of tyre levers. These Terry spring levers only cost 1s 4½d a set of three.

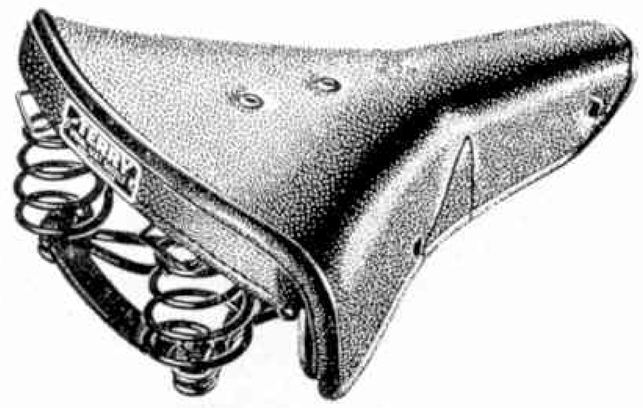


John Bull brake blocks come in sizes to fit most brakes. Complete with shoes, they cost 1s 9d per pair. Blocks only 9d per pair.



Loose or dangling brake cables can be dangerous! Therefore, fix them permanently in place with John Bull cable clips. 3d each.

Another puncture outfit, this time John Bull. It contains valve rubbers, french chalk, sand-paper and pump washers. Cost 1s 9d.



For comfort's sake worn saddles should be renewed. This Terry's saddle costs £1 5s 0d. A replacement top cover costs 13s 0d.

*VIKING WINS are REGULARLY recorded in*
TOURS of BRITAIN
NATIONAL Road Race CHAMPIONSHIPS
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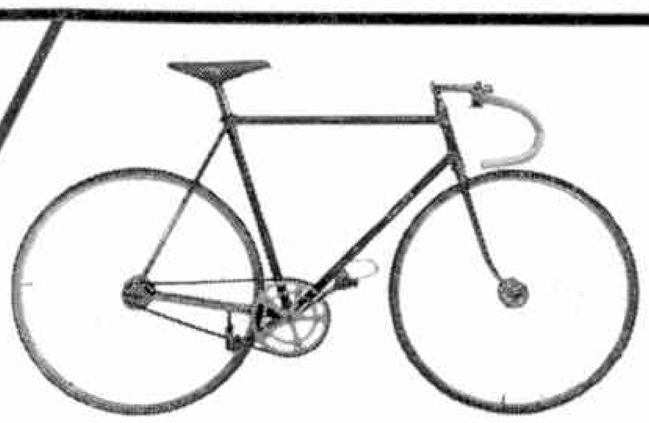
***STAND No. 59***
**CYCLE & MOTOR CYCLE SHOW**
***EARLS COURT***



THIS YEAR riders of VIKING Cycles have already won 4 NATIONAL TITLES. IN ADDITION, the Wolverhampton VIKING Wheelers have won 37 FIRSTS and 16 TEAM WINS, all in OPEN Racing Events. (up to September 13)

# Maintain your Bike

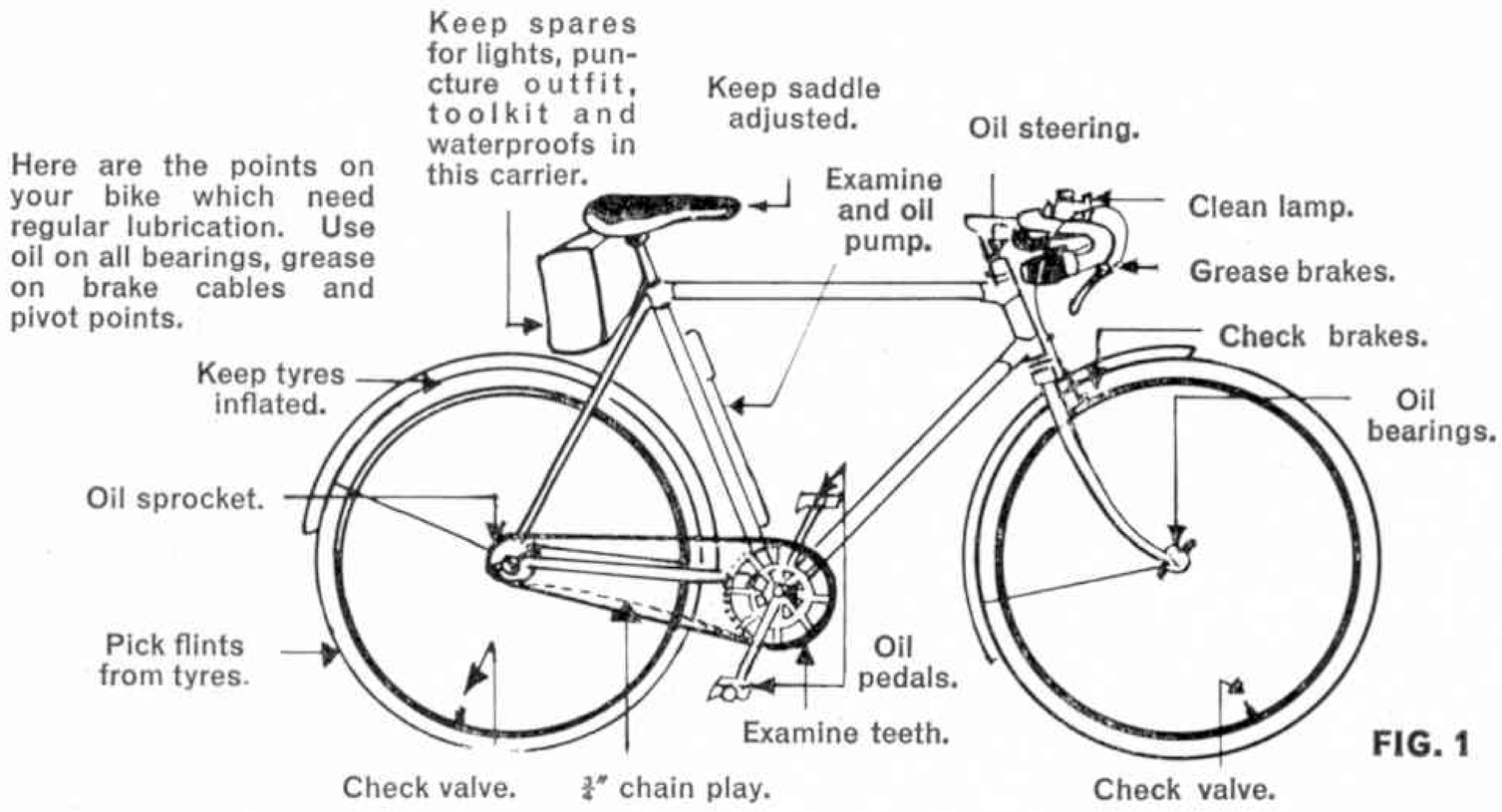

Here are the points on your bike which need regular lubrication. Use oil on all bearings, grease on brake cables and pivot points.
Keep spares for lights, puncture outfit, toolkit and waterproofs in this carrier.
Keep saddle adjusted.
Oil steering.
Examine and oil pump.
Clean lamp.
Grease brakes.
Check brakes.
Oil bearings.
Keep tyres inflated.
Oil sprocket.
Pick flints from tyres.
Oil pedals.
Examine teeth.
Check valve.
¾" chain play.
Check valve.

FIG. 1

WHETHER you bought your bike new or second-hand, you'll want to keep it running smoothly and looking smart. The answer is, of course, regular maintenance. The points needing attention are shown in Fig. 1.

Cleaning is always the first job and, make no mistake, a bike can get filthy in a week. Use paraffin to tackle parts of the frame covered with black oily deposits, while dried mud is easily removed with soap and warm water. You will need plenty of cotton rags to get everything clean and any signs of rust can be dealt with by scrubbing with paraffin.

When all is clean, the bearings can be lubricated. Use a thin oil—the right type can be obtained from your local cycle shop. A pressure oil can is useful, too. Oilers are provided for every bearing—both wheels, the bottom bracket, pedals and steering head. To ensure the lower head ball race is properly oiled, turn the machine upside down and run oil directly into the bearing, rotating the steering as you oil. A light smear of oil will be needed on the brake pivot points, both at the lever and the actual brakes.

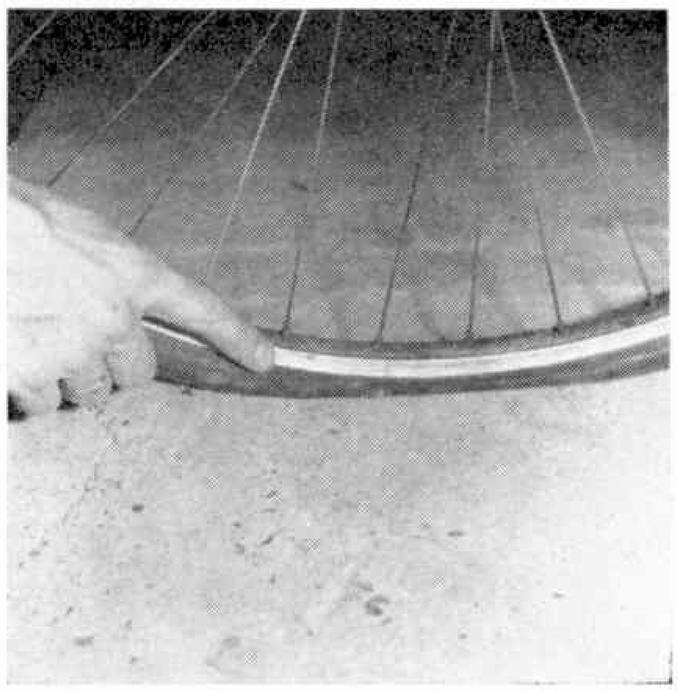
Another important job is to inspect the tyres for embedded flints. The best way is to turn the bike upside down and turn each wheel slowly. Scrutinise the tyres closely and pick out flints with a penknife blade. When this is done, pump the tyres up hard. This is very important. Tyres which are under-inflated will quickly wear out. The walls will deteriorate and the inner-tube will be cut from being banged between the wheel rim and the road or kerb.

Don't forget to have a look at the brakes. Check that the brake blocks are not worn and they are not out of alignment. Even if they are only partially worn, it is best to fit new ones.

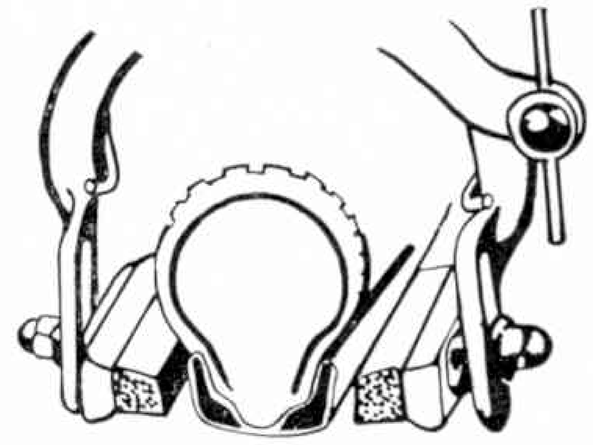
This is basically a simple job. Take one of the old blocks to the shop with you, to ensure that you buy the right type of replacement. Many different shapes are made and it is very easy to buy the wrong type.

The shoes must first be removed and the old blocks levered out. The new ones might be a tight fit and gentle force may be used to get them in. One method is to tap them gently home with a small hammer. Make absolutely certain that they are fitted the right way round. The camber on the face of the blocks must follow the shape of the rim and the closed end of the shoe must face forwards. Fig. 2 makes this clear.

Turn now to the chain. Chain tension is the first thing to check. This is adjusted by slackening off the rear wheel nuts and moving the wheel forward or back in the rear drop-out (Fig. 3). There should be about ¾ inch of slack, measured half-way between chainwheel and rear sprocket.



Never ride with flat tyres. They will be damaged and likely to cause a burst.



When fitting new brake blocks, check that the camber on the rubber matches that of the wheel. Blocks should be level with and parallel to the wheel. **FIG. 2**

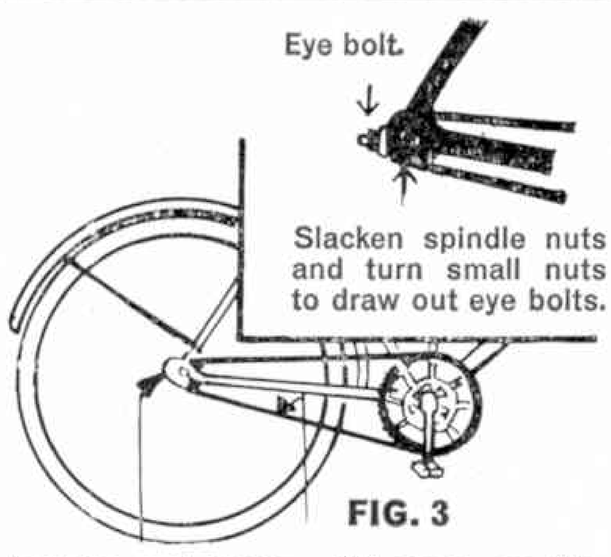
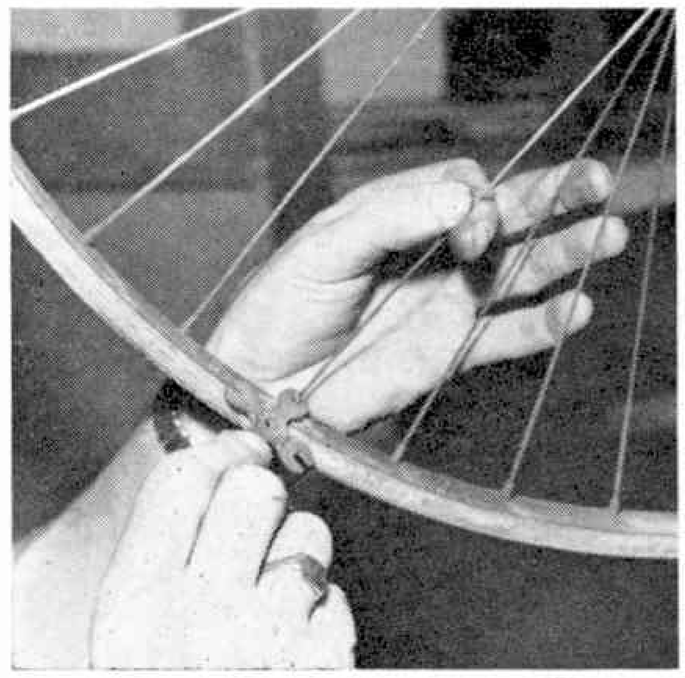

Eye bolt.
Slacken spindle nuts and turn small nuts to draw out eye bolts.
Let bike rest lightly on spindle for the correct chain tension.
Oil chain on the inside of rollers, not on the outside.

FIG. 3



A spoke key is needed for replacement of spokes or trueing of a buckled wheel.

The chain must be kept lubricated and oil should be applied regularly. The method is not too important but ideally it should go on to the *inside* face of the chain.

A quick run round everywhere to tighten any loose nuts should complete the regularly weekly maintenance.

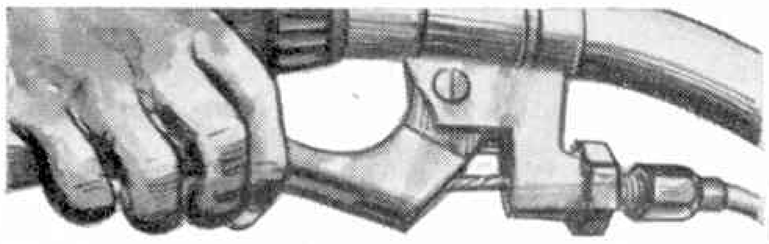
Every now and then the bearings should be checked for looseness and adjusted. On the wheels this is done by loosening off the spindle nuts and the cone locking nuts, adjusting the cone with a cone spanner and finally locking everything up tight.

Keep a particularly close watch on the head bearing. If this is loose it will upset your braking and you could be in trouble on a steep hill. The handlebars should turn without any tight spots, but there should be no play. The method is much the same as for the wheels. The top half of the top race is screwed down to achieve the adjustment and then locked by the hexagonal locking nut.

Brake and gear change cables require attention from time to time. The inner wire should be stripped from its outer cover and *liberally greased* before replacing.

If you are unfortunate enough to have an accident and buckle a wheel, the job is best tackled by an expert cycle mechanic. It can be lined-up in the frame, but the tension of the wheel might be upset by mishandling of the spoke key.

Every few months, take off the chain, wash it in paraffin and then immerse in warm liquid grease. Finally, if you haven't checked your lights for some time, make sure you do it before a long run—you might need them and discover, too late, that they do not work!



ROMAC REGD

## CONTROL CABLES

It is a good habit for every reader of 'Meccano Magazine' to regularly check the cables on his cycle. And when the cables show signs of wear the safest plan is to replace them with Romac Control Cables. Romac Cables are strength-tested, greased, and have waterproof casings and precision fittings. Made in a full-range of sizes to fit all cycles. From dealers, accessory shops, or order from Halfords.

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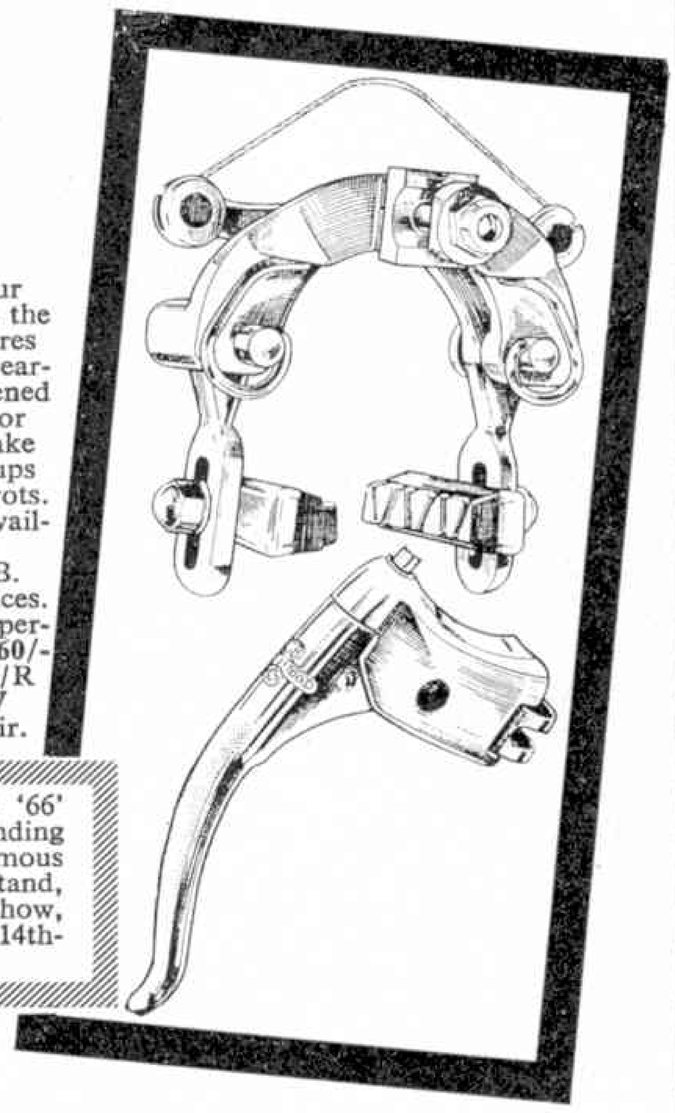
The fabulous G.B. Coureur '66' centre pull brake, with the now famous unique features of totally enclosed nylon bearings and specially strengthened section backplate, allows for fitting of revolutionary brake springs operating the stirrups remotely through their pivots. This light alloy brake is available from your local cycle shop with a choice of G.B. levers at the following prices. G.B. Coureur '66' with Superhood Rapide Q./R lever - **60/-** pair; with Continental Q./R lever - **60/-** pair; with NEW Superhood Lever - **55/6** pair.



Come and see the Coureur '66' together with other outstanding components from the famous G.B. range on the G.B. Stand, No. 118, at the Cycle Show, Earls Court, from Nov 14th-21st.

GB

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# HEARD THIS ONE?

*If you know any good jokes which you think will make other readers laugh, write them down on a postcard and send them in to: Meccano Magazine, Thomas Skinner & Co. (Publishers) Ltd., St. Alphage House, Fore Street, London, E.C.2. The best will be selected for publication.*

### Wait for hit!

On hearing yelling and shouting coming from his back garden, Mr. Williams rushed out of his house to see his son sitting on top of another boy on the lawn.

"John!" exclaimed Mr. Williams. "Why on earth are you holding Terry down like that?"

"Because he hit me in the eye, dad!" protested John.

"Really," said Mr. Williams. "I thought I told you to count to a hundred before losing your temper!"

"That's what I'm doing," replied John, "but I'm sitting on him so that he'll be here when I get to 100."

(*Sent in by R. A. Lamb, High Barnet, Herts*)

"I know you're in there, Sir Ethelbert, so answer me!"

### What's the Answer?

Questions, questions, questions! Every minute of the day a little boy was pestering his father with questions about various things. Eventually the father ran out of patience and said: "Look here, Timmy. Didn't you ever hear of the little boy who asked so many questions that he turned into a question mark?"

Silence reigned for a minute, then the lad's face showed the usual puzzled expression. "A question mark, dad?" queried Timmy, "Then how did he keep the dot under himself?"

### It's a hold-up

For the umpteenth time the train juddered to a halt. Confronting the ticket collector in the corridor, the irate passenger yelled: "And now what's the hold-up? We're not in the station yet, are we?" "No, sir," replied the ticket-collector. "We've caught up with yesterday's train."

"I'm glad plastic flower pots are becoming more popular!"

### Laid up

Not feeling too well a chicken went to see the doctor. "Are you here for an egg-spection?" asked the doctor. "No," replied the chicken. "I am here for a chick-up."

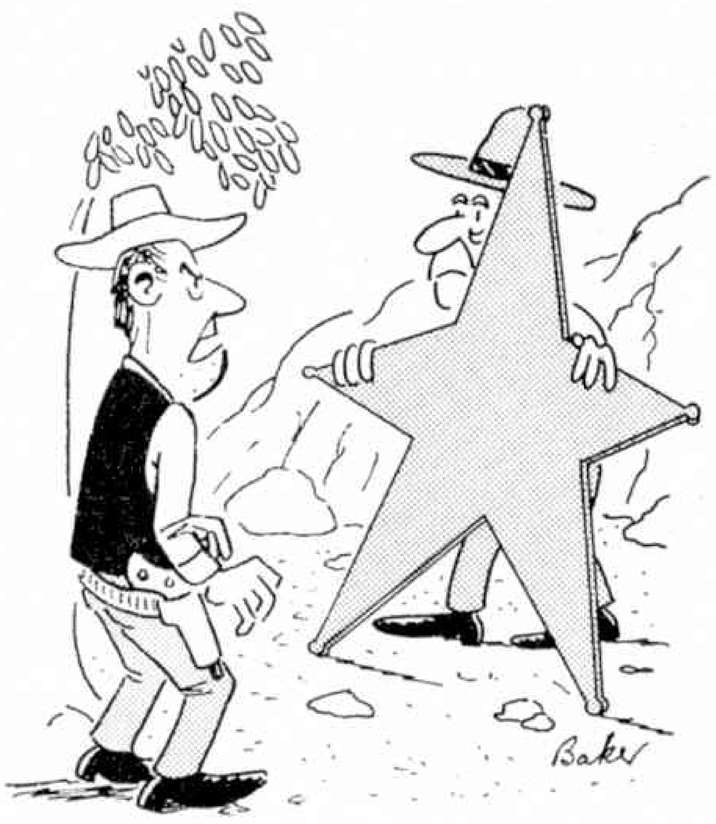
(*Sent in by A. A. Towne, Welton, Brough, Yorks.*)

### Stamp it out

Every time the schoolteacher returned to the classroom the class was in an uproar, yet other classes always appeared well-behaved when other teachers entered the rooms.

"I don't understand it," said the teacher to the class. "How is it that you are never working when I come into the room?"

"Easy, sir," replied Smith minor. "You wear crepe-soled shoes!"




"Quit hidin' behind that tin badge, marshal!"

### Fired—His imagination

Boss: "If you can't do better work I'll have to hire another office boy!"

Office Boy: "Thank you, sir. I could get along much better with some help."

### A trunk call

While holding a nature-study class and discussing trees, the teacher asked: "What has a green trunk?"

"An unripe elephant!" came a voice from the back of the class.

(*Sent in by J. C. Harris, Diss, Norfolk.*)

### A spooky problem

How do ghosts get into houses?
With skeleton keys, of course!

### At the end of the line!

Overheard by the telephone switchboard operator.

"Is that you, Joe?"
"Yes, this is Joe."
"It doesn't sound like Joe."
"It's me all right."
"Can you lend me five pounds, Joe?"
"I'll ask him when he comes in."

### A Close Shave

After nicking the customer's ear and chipping his chin, the barber was a little relieved when he had almost finished shaving the gentleman in the chair.

"Now, sir, will you have anything on your face when I've finished?" asked the barber.

"I don't know," replied the nervous customer. "But I hope I'll at least have a nose!"

### CAR QUIZ NO. 2.

This is a view of the rear light of a very popular family saloon car. What is the name of the car and what is the model?

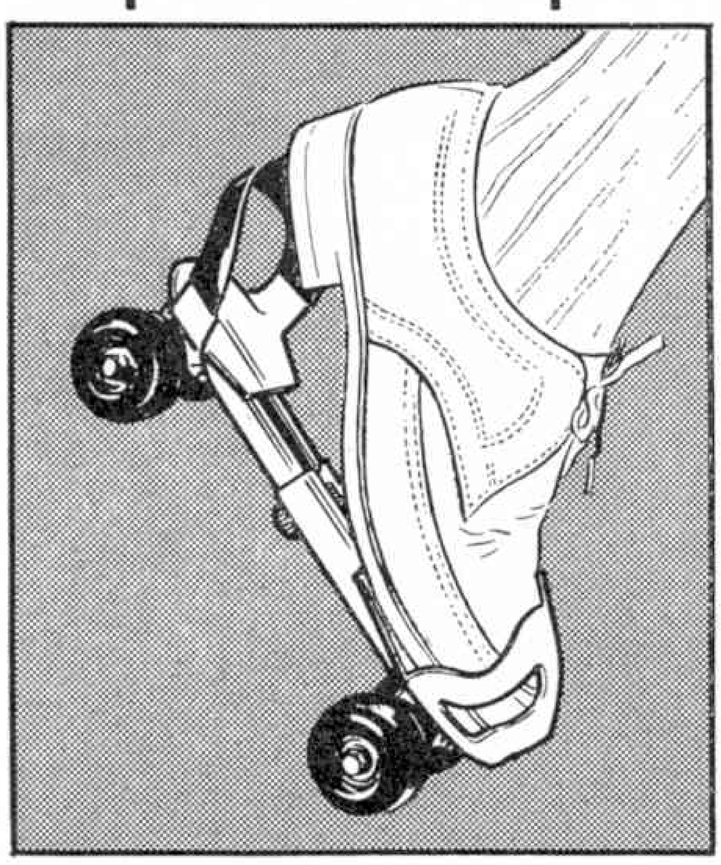
Answer: Ford Corsair

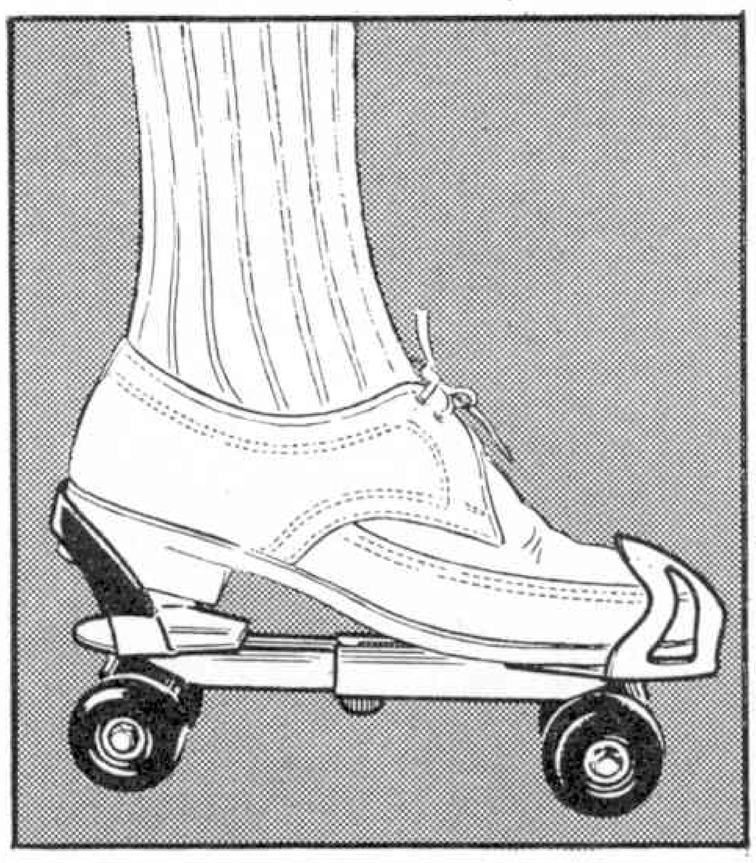
## much more fun!

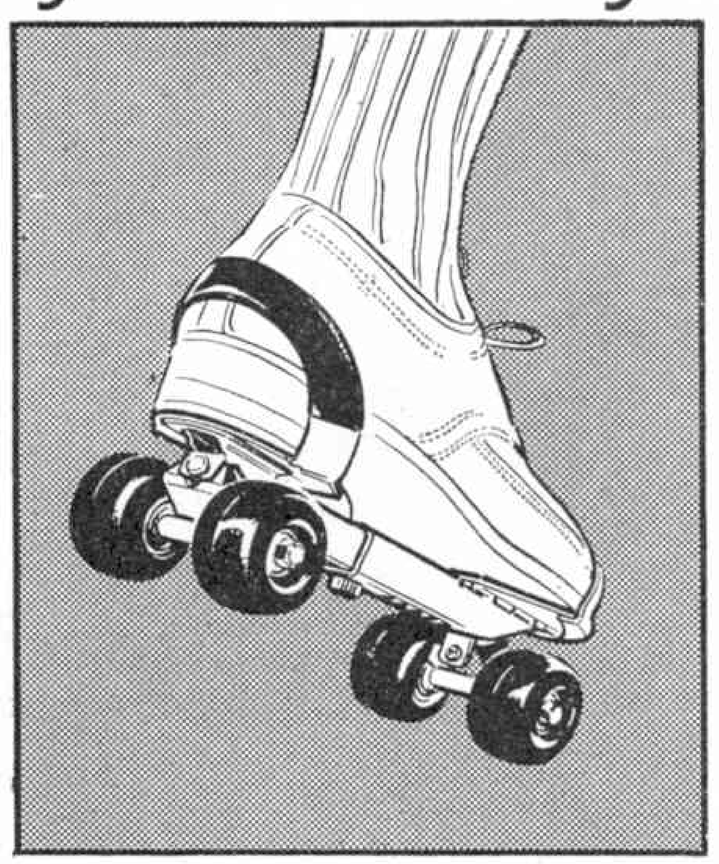
# Super-Skates

## THE REVOLUTIONARY NEW IDEA BY MECCANO

slip on . . . push . . . click, and you're away!







Much better than skating — try super-skating. On Super-Skates there's only a 4 second countdown and you're away! Just pick 'em up, click 'em on and skate. No straps, No keys, No maintenance. Super-Skates can't come off accidentally. And they're built extra-tough to last. **49/6**

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- ☐ Safety hubs on super silent rubber wheels
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## SUPER-SKATES ARE THE ONLY NO-STRAP, NO-KEY SKATES IN THE WORLD

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by **M. Jones**

# Modelling Flowers

THE past two features on paper sculpture were intended to introduce you to this decorative medium, and if you have followed them, I am sure that you have acquired enough skill in the processes of scoring, creasing, cutting and moulding to enable you to make complicated objects. However, there is a limit to the complexity of the objects one can mould with paper. Therefore, one has to simplify forms before they may be translated into paper models. Providing you keep this idea of simplicity in mind, you will be surprised at the number and variety of items you can produce.

Paper flowers are very interesting to make and are decorative. Therefore, this month I will show you how to make a basketful of roses. All the flowers, leaves and vase in the picture above were made from two sheets of paper 10 inches by 12 inches, which costs about 3d. The time taken in producing the complete model was about 45 minutes.

### Making the Flowers

The first step in producing the flowers is to make their 'heads'. To do this, cut out a circle about 5 inches in diameter—

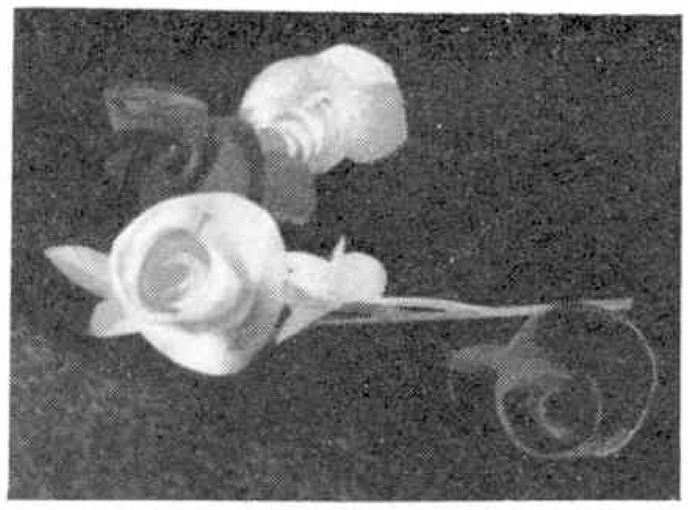


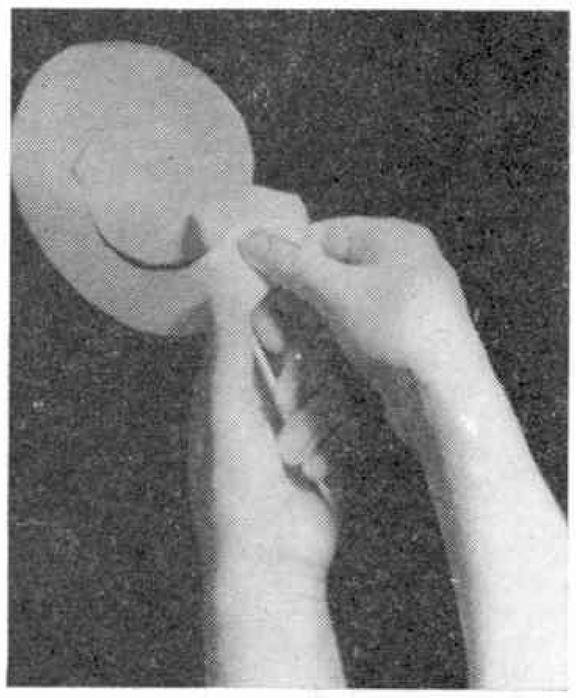
diagram 1—and then cut away the area indicated by diagonal shadow in the drawing. Next, lightly draw a dotted line on the circle as indicated and cut all the way along it. Now, holding end A in your one hand and a rule in the other, draw the paper between your thumb and the rule. This will produce the curling effect described last month, and if you now roll the end A with your fingers about halfway along the length of the cut, you will have a rose shape in your hand.

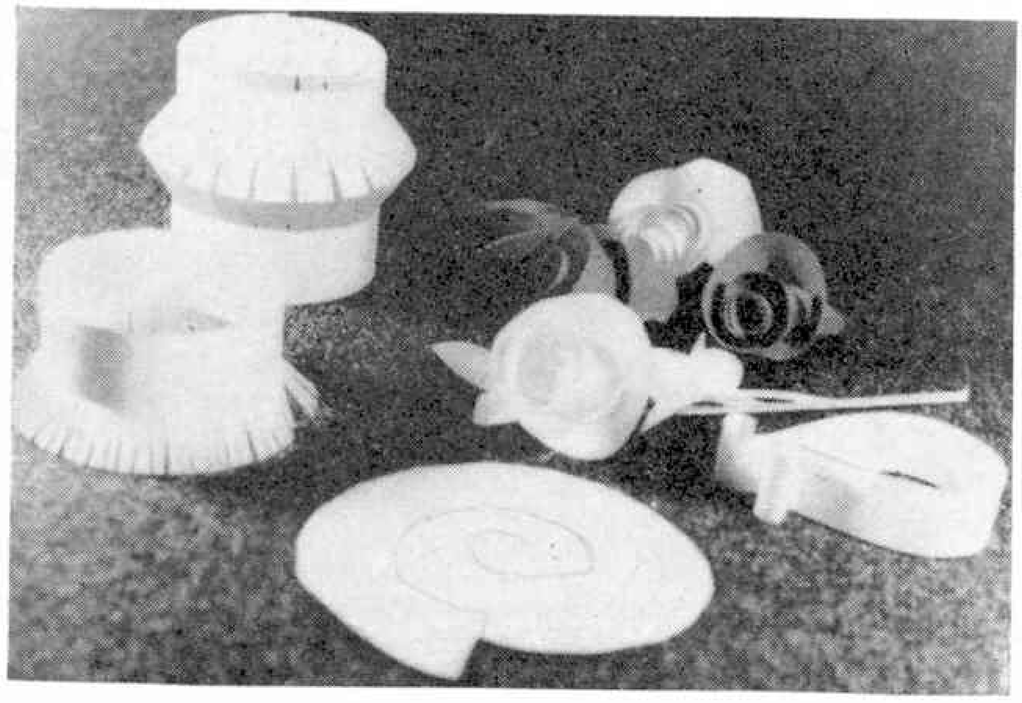
The next step in production is to make the stem. You will find that this is the more delicate part of the work, and unless you handle the cutting and creasing very gently, your stem may not be stiff and strong enough to hold the weight of your flower. Cut out the shape indicated by the thick outline on diagram 2, score along the dotted lines and crease away from the scoring. The top end A of the stem can then be inserted about one inch into a slit cut into the base of the rose and is folded over twice inside the rose to stop it being pulled out. You may want to fix it firmly with a piece of sticky tape but this is unnecessary and looks untidy. Once you have put your roses into the vase, they need not be disturbed and, therefore, do not require any fixative. The instructions I have given may be repeated to produce any number of roses you may require.

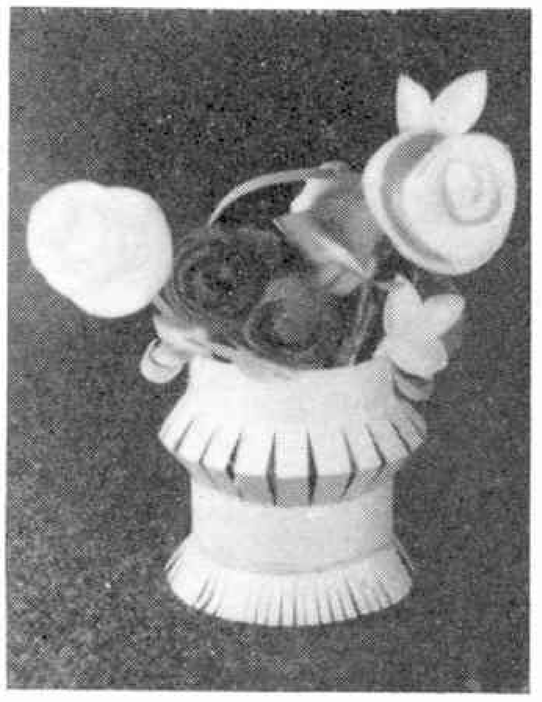
### Vase Construction

The vase in the photograph is very decorative and based on the exercise given in last month's article. The only variation is that it has a handle on top and, of course, a container inside to hold the flowers. In order to make the vase, follow the instructions given in diagram 3. The cylindrical container can be made by rolling a piece of paper, size 3 inches by 8 inches, into a tubular shape and joining it together, where the ends meet, with transparent sticky tape. You can seal the bottom of the container by cutting a circle out of the paper exactly the diameter of the cylinder and sticking it to the cylinder with Sellotape at four points. The vase can then be assembled around the cylinder. The handle for the basket consists of a strip of paper rolled at both ends and joined to the vase with Bostick or a similar strong, clear glue.

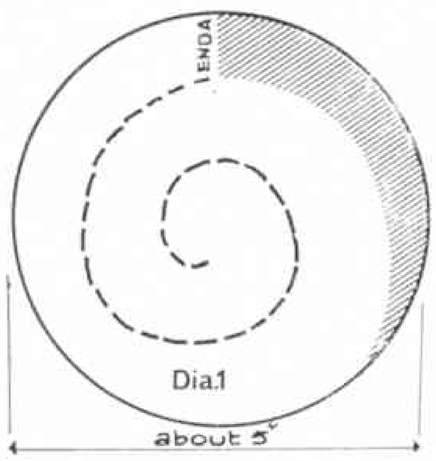
For the vase I used a cream-coloured paper and the roses were made out of cream and red paper. You can choose your own colours and, when buying the coloured paper, make sure you get stiff cover card or paper which is medium stiff.

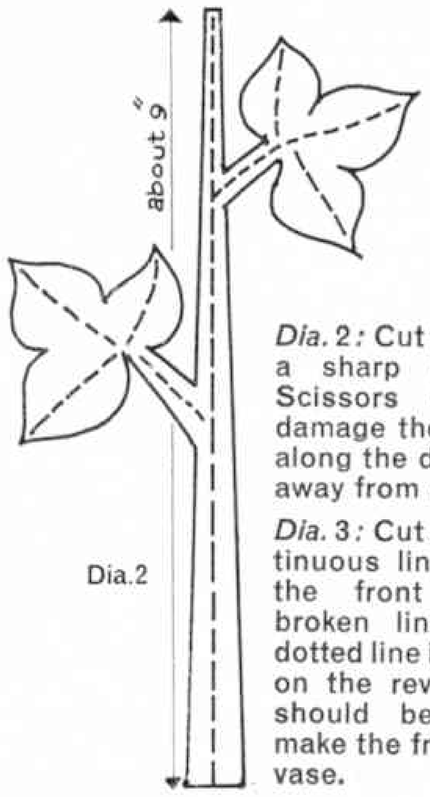






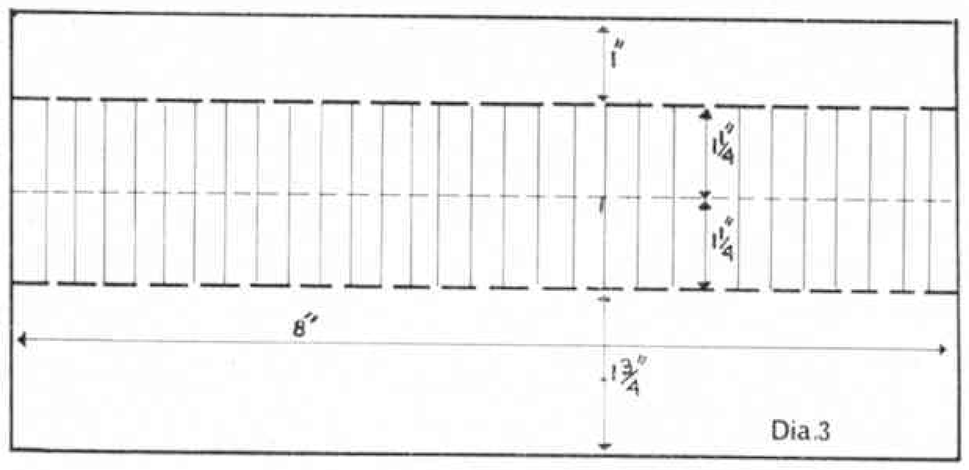
*Above:* Showing curling of the flower head with a circular pull of the paper through the thumb and the edge of the rule. *Middle:* All the components. *Right:* The completed basket.

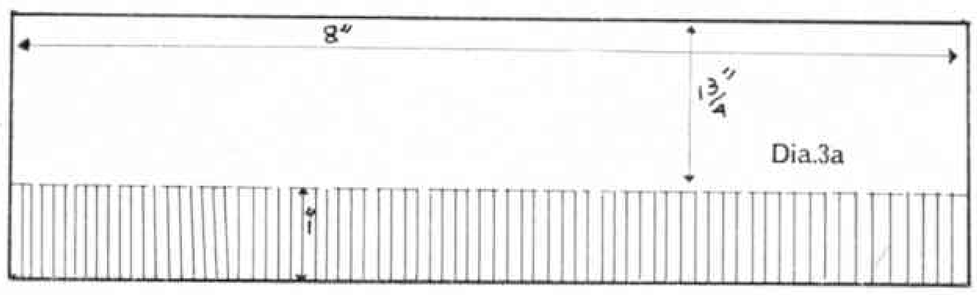



*Dia.* 2: Cut this shape with a sharp pointed knife. Scissors are likely to damage the stem. Score along the dotted line, fold away from cuts.

*Dia.* 3: Cut along thin continuous lines. Score on the front along thick broken line. The thin dotted line indicates score on the reverse. *Dia.* 3a should be followed to make the frilly base to the vase.



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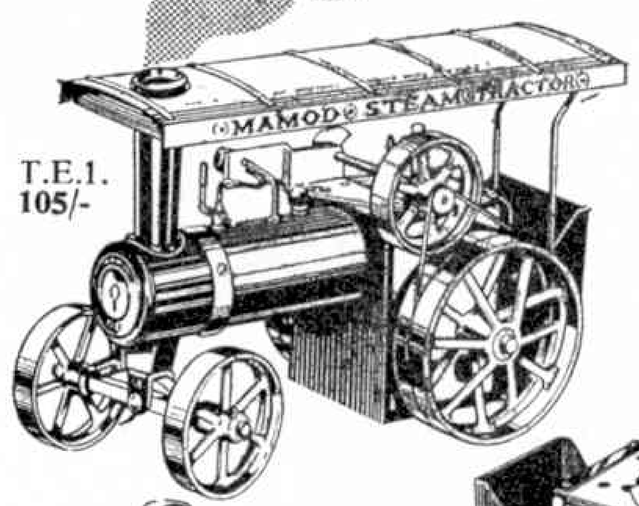


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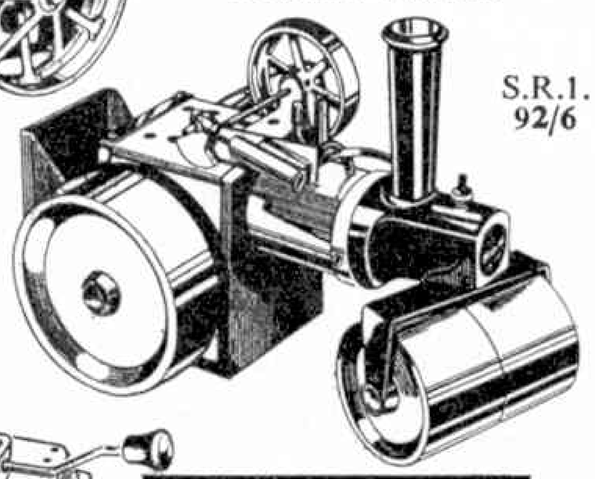
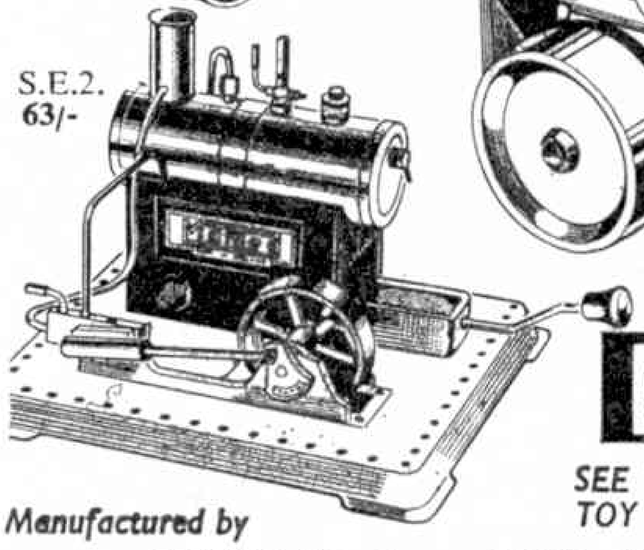


S.R.1. **92/6**



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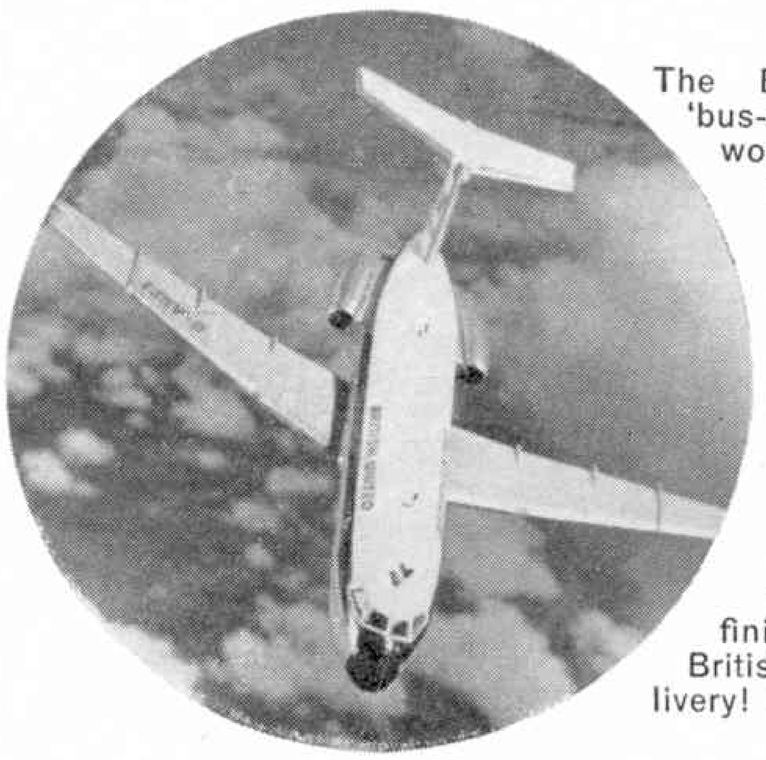
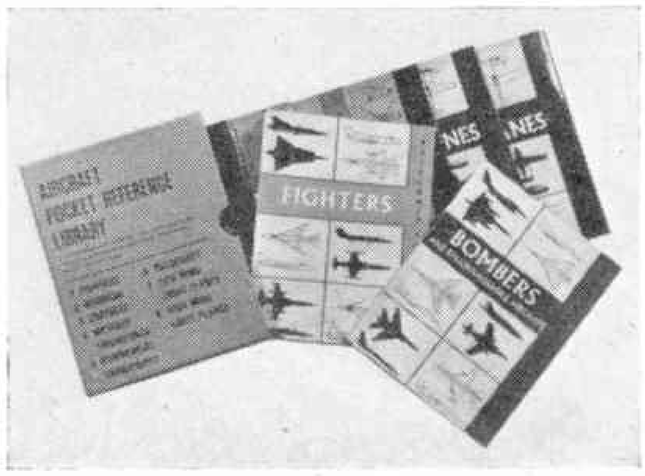
# window SHOPPING

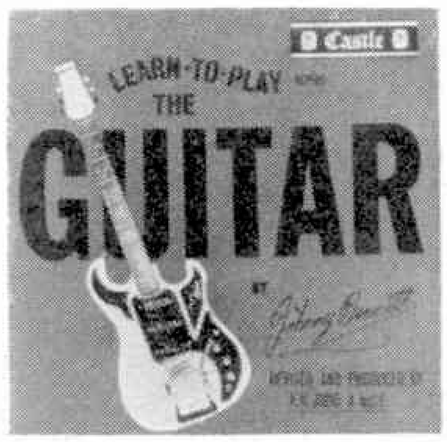
## kits and models on the market



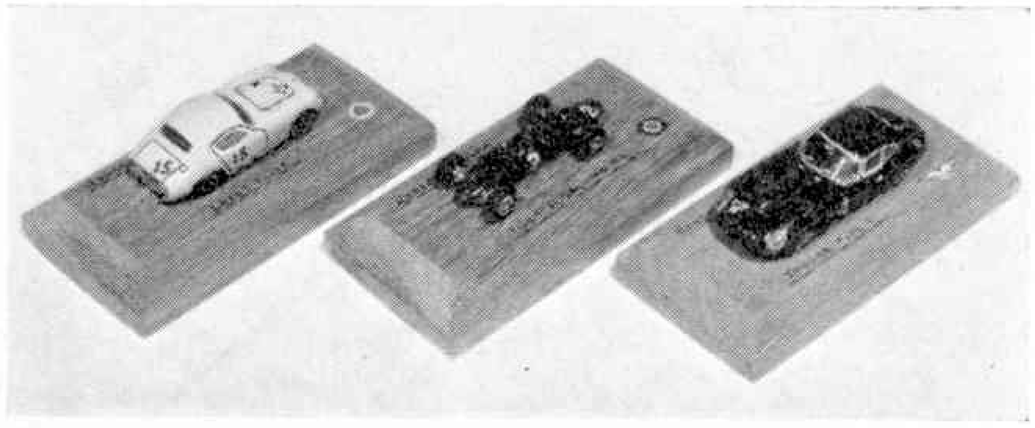
The B.A.C. One-Eleven 'bus-stop' jet is the world's first airliner built especially for short-haul passenger work and it is also the latest model aircraft to join the Airfix Sky King series. Made to 1/144th scale, the kit contains 50 individual components in grey polystyrene plus transfers to finish the model in British United Airways livery! **Price 3s. 6d.**



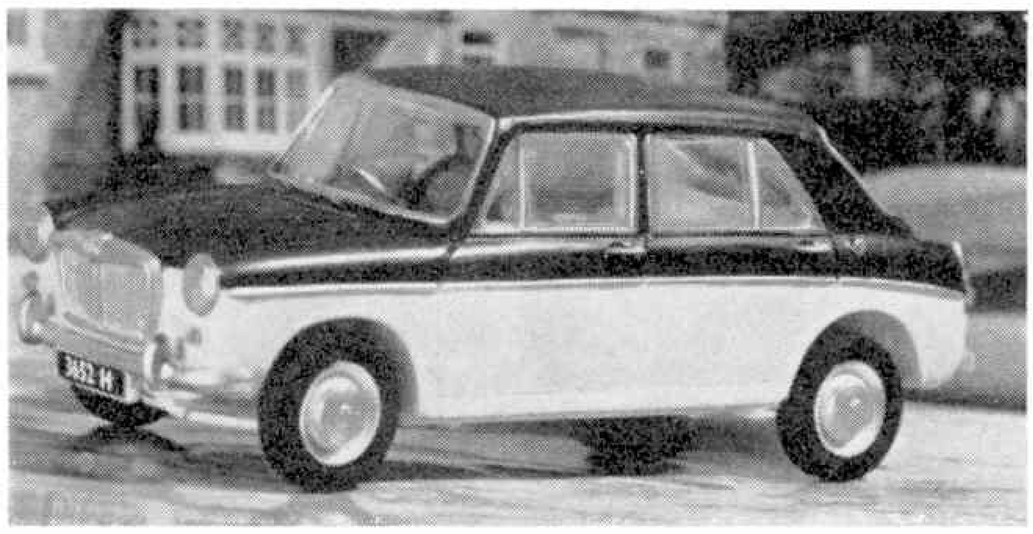

If you're keen on aircraft spotting and want an up-to-date guide of all the latest aeroplanes, the Aircraft Pocket Reference Library by MacDonald & Co. (Publishers) Ltd., should prove to be just the series for which you have been waiting. Each of the eight different titles in the set costs **2s. 6d.** or the complete set can be bought in a special case for **£1 0s. 0d.** The types of aircraft are sectionalised and the eight books in the series feature fighters, bombers, trainers, military transports, commercial transports, rotocraft, low wing light planes and high wing light planes.



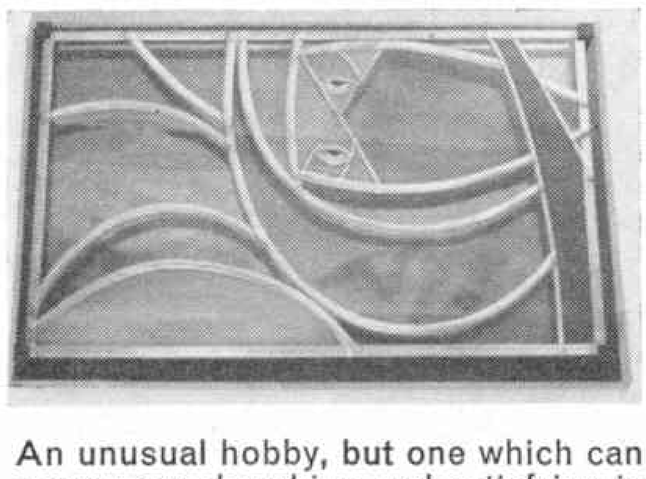

Learn to play the guitar by record. Castle Records have just released a brand-new 10 inch L.P. which features six complete lessons from tuning to modern beat rhythms. The record comes complete with modern chord guides, plus practice and tuning charts. The lessons given on the record are by Johnny Bennett, a top guitarist who has played with many famous vocal stars and orchestras. The record, No. LPG1, with fully-illustrated tuning, chords and practice chart costs **21s. 0d.** and is available from Recorded Tuition Ltd., 174 Maybank Road, South Woodford, London, E.18. Special packing and postage (U.K.) is **3s. 0d.** extra.



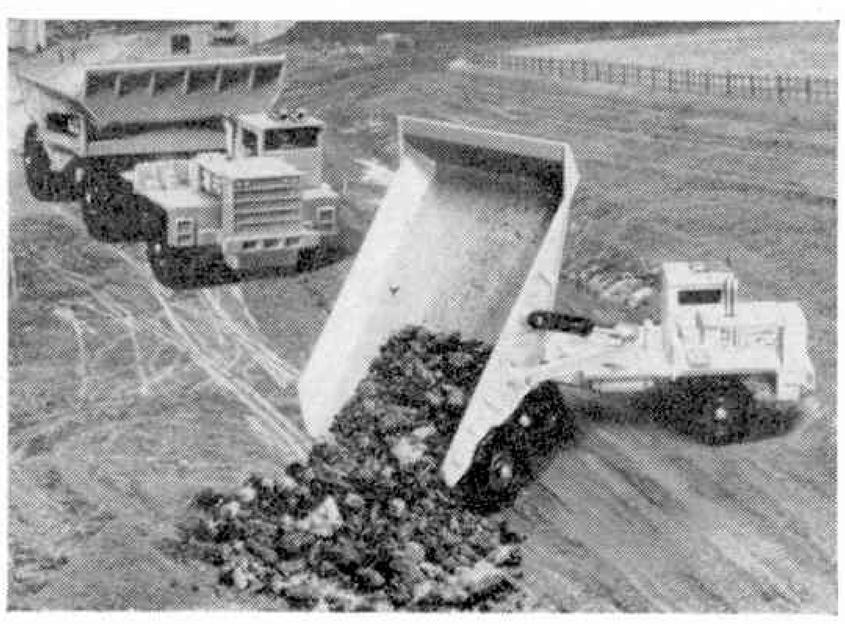
Thirty models covering G.T., Sports and Formula One cars are now featured in the 'Roadace' replica series by Auto-models Ltd., 70 Finsbury Pavement, London, E.C.2. With a scale of 3 mm. to the foot, these units are ideal for the collector with limited space. All models are mounted on a wooden plinth, as shown, and cost **12s. 6d.** Post and packing **1s. 0d.**



The sports version of the B.M.C. 1100 saloon car series—the M.G. 1100—is the latest constant scale construction kit to be released by Airfix. The 58 piece kit is in 1/32nd scale and contains such detailed items as handbrake, number plate lights and a gearbox/sump unit accurate down to the cooling fins. Windows, head and tail light transparencies are of course included with full painting and assembly instructions, plus a choice of three number plates. **Price 2s. 0d.**



An unusual hobby, but one which can prove very absorbing and satisfying is making pictures with stained glass. A new 3-D art form which features stained glass is titled, Decra-Led Stained Glass Art Picture Kits. The kits are manufactured by North Western Lead Co. Ltd., and they make up into excitingly new and different pictures for the home. The Decra-Led kits are available from Hamleys, Marshall and Snelgrove, Departmental Stores and Do-it-Yourself or Hobby Shops, **price 29s. 11d.** They are also available direct from Mr. J. A. Farrell, North Western Lead Co. Ltd., P.O. Box 7, Junction Street, Hyde, Cheshire. Post and packing **2s. 9d.** extra.



The King Size No. K-2, KW-Dart Dump Truck by Lesney Products & Co. Ltd., is the latest addition to the 'Matchbox' range of models. The scale of the model is 96 to 1 and its overall length is $5\frac{5}{8}$ inches. Special details about the model include a working rear dump-section operated by twin hydraulic rams, plated horns and engine, tinted cab windows, giant balloon tyres and authentic full-colour transfers. **Price 7s. 6d.**

ANOTHER
**MECCANO**
PRODUCT

# THIS IS THE Play-Doh FUN FACTORY

## makes basic shapes for building anything

Yes, it's a real toy factory . . . making a variety of blocks, logs, girders and other shapes that you can build into cabins, tables, chairs, boats, horses—in fact anything you like! You get a Fun Factory, 2 Dies with 10 shapes, a Trimmer, a Book of Ideas and a tub of Play-Doh Modelling Compound.
Play-Doh is soft and easy to use. It smells nice too—and doesn't mess up clothes or furniture. There's loads of fun in the Play-Doh Fun Factory.

**FUN FACTORY** 14/11d.

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Contains 3 tubs of Play-Doh — Red, Yellow and Blue—can be mixed to make lots of bright new colours. **6/11d.**

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Highfly Roundabout 41
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MECCANO
DINKY TOYS · HORNBY DUBLO · CLIKI

# Two Speed and Reverse Gear Box

IN order to provide variable speeds for working Meccano Models, below are given details of a gearbox which, besides giving one reverse and two forward speeds, also incorporates a simple clutch. However, a glance at the photograph will show that no gear-change or clutch lever is fitted. I have purposely omitted these as I should like builders to design these features themselves. I will be glad to receive details of suitable arrangements from readers, and will try to include one or two of them in a future issue. No prizes are offered as this is an exercise rather than a competition. The framework is built up from two $3\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strips 1, connected at one end by an eight-hole Wheel Disc 2 and, at the other end, by a $1\frac{1}{2}$ in. Flat Girder 3, overlaid by a $1\frac{1}{2}$ in. Strip 4. The Flat Girder is spaced from the lugs of the Double Angle Strips by three Washers on one of the Bolts and by three Washers and a Fishplate 5 on the other Bolt. Through the centre holes of the Double Angle Strips a $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strip 6 is secured, being spaced by a Washer on each Bolt. Another $1\frac{1}{2}$ in. Flat Girder is bolted to this Double Angle Strip.

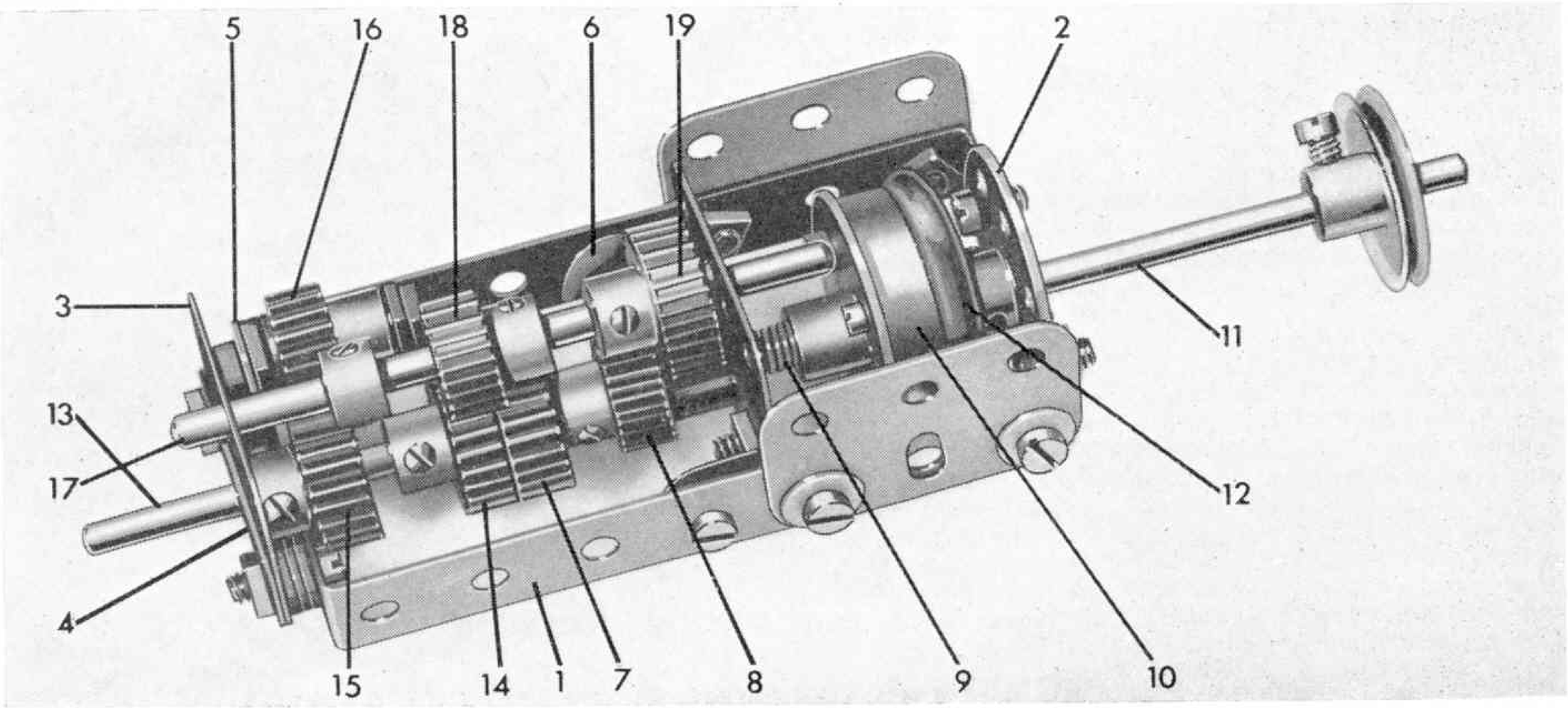
A 2 in. Rod carrying a $\frac{3}{4}$ in. Pinion 7, a $\frac{1}{2}$ in. Pinion 8, a Compression Spring 9 and a $1\frac{1}{8}$ in. Flanged Wheel 10 is passed through the centre hole of Double Angle Strip 6. The Rod extends only approximately half-way into the boss of Pinion 7, and the Flanged Wheel is free, being held in place by a Collar hidden inside the Flanged Wheel. In this case also the Rod fits only half-way into the Collar. Bolts in the transversed tapped bores of the Collar engage with Bolts secured through the Flanged Wheel. Another $2\frac{1}{2}$ in. Rod 11, carrying a 1 in. Pulley and a 1 in. Pulley with Rubber Ring 12, fits into the other side of the Collar.

### Movable Lay-shaft

The 2 in. Rod 13 that serves as the output shaft fits into the other side of Pinion 7. Mounted on this Rod are a further two $\frac{3}{4}$ in. Pinions 14 and 15. Care should be taken to see that Pinion 14 is almost touching Pinion 7, and that the two sets of teeth are in line. Pinion 15 is in constant mesh with Pinion 14 give first gear, and second gear is mounted in Fishplate 5.

A 3 in. Rod 17, carrying a Collar, a $\frac{1}{2}$ in. Pinion 18 and a $\frac{3}{4}$ in. Pinion 19, forms the movable lay-shaft. Neutral is obtained when Pinion 18 is out of mesh with all other gears. When Pinion 18 is in mesh with Pinion 16, reverse is engaged. Pinion 19 in mesh with Pinion 8 and Pinion 18 in mesh with Pinion 14 give first gear, and second gear is obtained when Pinion 18 is in mesh with both Pinions 7 and 14, provided that Pinion 19 is out of mesh. Finally, clutch guards are provided by two $1\frac{1}{2}$ in. Flat Girders.

**Parts required:**—1 of No. 6a; 1 of No. 10; 1 or No. 16; 1 of No. 16a; 2 of No. 17; 1 of No. 20; 2 of No. 22; 1 of No. 24a; 4 of No. 25; 3 of No. 26; 15 of No. 37a; 10 of No. 37b; 9 of No. 38; 1 of No. 48; 2 of No. 48b; 1 of No. 59; 4 of No. 103h; 1 of No. 111; 2 of No. 111c; 1 of No. 120b; 1 of No. 155.



by **Spanner**

# BUILD THE MECCANO GALLEON

IT isn't very often that a nautical flavour is introduced into the Meccano hobby. One good reason for this, of course, is that once a boat has been built nothing can really be done with it. It cannot be sailed, therefore its only actual use is as a static display model. Consequently, as I have mentioned before, the popularity of shipping among Meccano builders is less than other facets of engineering. However, it is not right to ignore this side of things completely, and so I give below details of one of the most romantic stalwarts of the ocean—a galleon.

Starting with the hull, both sides of which are identical, two Angle Girders 2 and 3 are bolted together to form a reverse angle girder, which, in turn, is bolted to a 5½ in. by 2½ in. Flanged Plate 1, at the same time fixing in place two 5½ in. by 2½ in. Flexible Plates 4. Plate 4 is extended by a 2½ in. by 2 in. Triangular Flexible Plate 6, and a 2½ in. by 2½ in. Flexible Plate 7 is then attached by Angle Brackets to the Angle Girders 2. A 5½ in. Strip 8 and a 5½ in. by 1½ in. Flexible Plate 9 are bolted to Angle Girder 3 on each side, are shaped as shown and are connected by an Angle Bracket to serve as the prow. A foredeck is built up from two 2½ in. by 2½ in. Flexible Plates 10, overlapped three holes and bolted to two 2½ in. by 2 in. Triangular Flexible Plates. The whole assembly should fit neatly into the space between Flexible Plates 9, where it is supported by two Trunnions 11, bolted to the Plates 9. A 2½ in. by 1½ in. Flexible Plate 15 is fixed to the Plates 10 by an Angle Bracket and then two Reversed Angle Brackets 16 are bolted to the Angle Girders 3, so that they rest on top of Plates 10. A ½ in. Bolt is passed through the Triangular Flexible Plates and into a Collar 12 that holds the bowsprit, which is represented by a 5 in. Rod. Next, a 3½ in. Strip 13, carrying two 2½ in. by 1½ in. Flexible Plates, is fixed by an Angle Bracket and a Fishplate to a 2½ in. Strip 14 which, in turn, is connected to the Flexible Plate 7 by an Angle Bracket.

## Filling in the Deck

The deck between the Flanged Plate 1 and the 2½ in. by 1½ in. Flexible Plate 15 is filled in by two 2½ in. by ½ in. Double Angle Strips 17.

At the opposite end of the hull a 2½ in. by 1½ in. Flanged Plate 18 is bolted between the Angle Girders 2. Fixed to this are two 2½ in. by 1½ in. Flexible Plates 19, which are also secured to the Angle Girders 2 by means of a 1½ in. Strip, and a 2½ in. by 1½ in. Flexible Plate 20. Underneath, a 2½ in. by 2½ in. Flexible Plate 21 is held in place by two Double Brackets, while inside, a Semi-Circular Plate is fixed by Angle Brackets between the two Angle Girders 2 and another Semi-Circular Plate 22 is bolted to it. An eight-holed Wheel Disc is mounted on each Flexible Plate 19, and a Flat Trunnion is bolted to the Plate 20. A Collar fixed in the apex hole of this Trunnion supports a 1½ in. Rod. A 2½ in. by 2½ in. Flexible Plate 24 is fixed between the Flexible Plates 19 to form the upper or 'poop' deck. The stairs or 'companionway' to this deck are formed by two Reversed Angle Brackets bolted together. A third 2½ in. by ½ in. Double Angle Strip 23 is bolted between the Angle Girders 2. The rudder assembly is built up from a 4 in. Rod, to which a Flat Trunnion is attached by means of a Right Angled Rod and Strip Connector. The Rod is passed through the Flexible Plates 21 and 24 and is secured at the top by a second Right Angled Strip Connector. Care should be taken to see that it pivots freely.

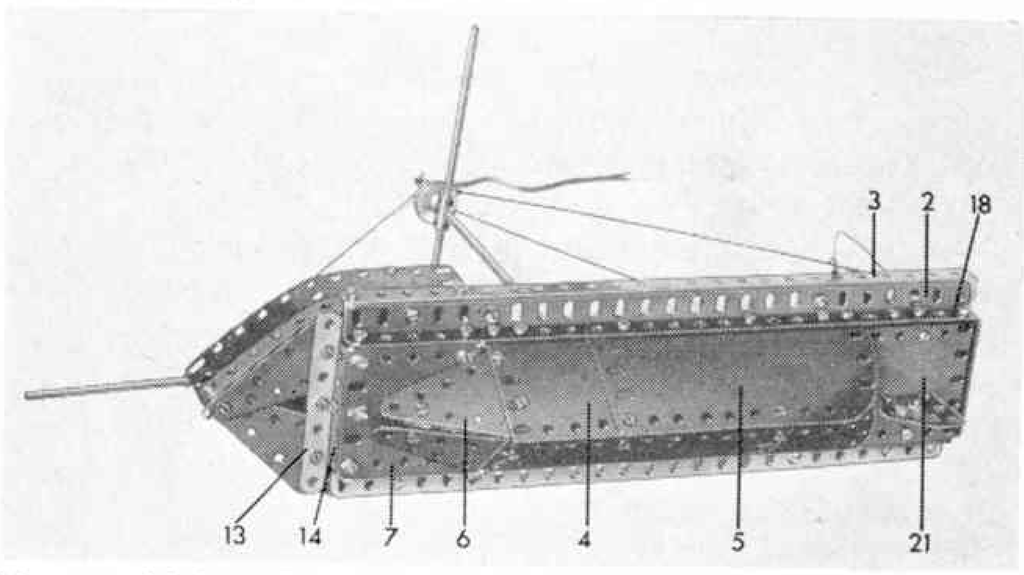
An 11½ in. Rod, fixed to the Flanged Plate 1 by a 1 in. Pulley on top and an eight-holed Bush Wheel underneath, forms the mast. Near the top are the crosstrees, represented by two 4 in. Rods held in a Coupling and, above these, the crow's nest, which is a 1 in. Pulley with Boss.

At this point, the bottom of the hull can be joined and this is done by bolting Angle Brackets to the two sets of plates. It may prove a little difficult, but it can be achieved with patience and perseverance.

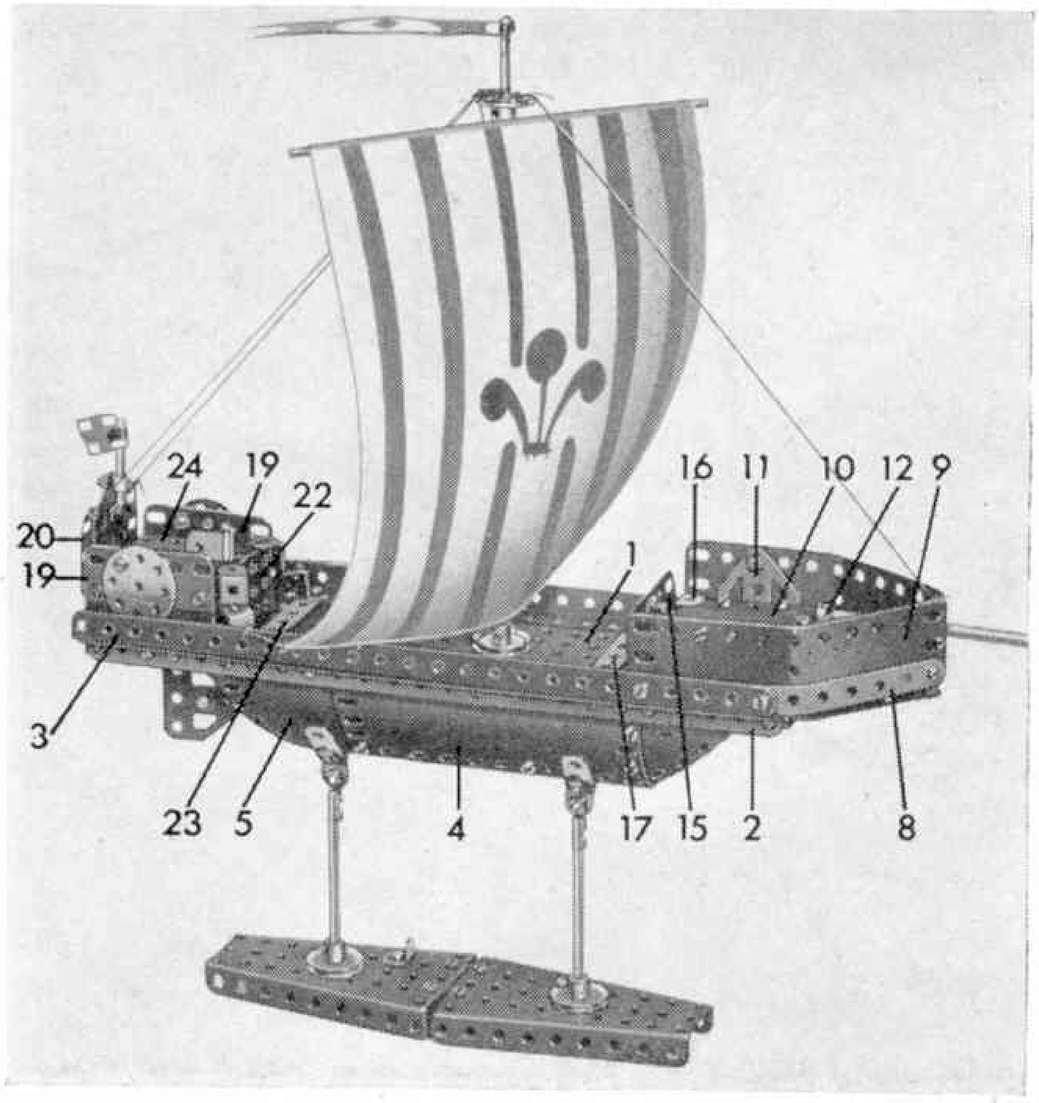
Ordinary Meccano Cord is used for the rigging lines, which are arranged as shown in the picture on this page. The sails and flags are made from thin cardboard, cut to shape, painted and fixed in place by Spring Clips.

If required, a stand can be made from two Flanged Sector Plates, joined together by Fishplates. A 3½ in. Rod is held in each Plate by a 1 in. Pulley and a Collar. At the top of both Rods a Rod and Strip Connector, which has two Obtuse Angle Brackets bolted to it, is fitted. This, in turn, holds a 1 in. by 1 in. Angle Bracket on which the Galleon rests.

**Parts required :**—2 of No. 2; 1 of No. 3; 1 of No. 5; 2 of No. 6a; 4 of No. 8; 1 of No. 10; 3 of No. 11; 12 of No. 12; 2 of No. 12a; 5 of No. 12c; 1 of No. 13; 1 of No. 15; 2 of No. 15b; 3 of No. 16; 1 of No. 18a; 4 of No. 22; 1 of No. 24; 2 of No. 24a; 4 of No. 35; 99 of No. 37a; 95 of No. 37b; 4 of No. 38; 1 of No. 40; 3 of No. 48a; 1 of No. 51; 1 of No. 52; 2 of No. 54; 4 of No. 59; 1 of No. 63; 2 of No. 111c; 6 of No. 125; 2 of No. 126; 2 of No. 126a; 4 of No. 188; 2 of No. 189; 5 of No. 190; 4 of No. 192; 2 of No. 212; 2 of No. 212a; 2 of No. 214; 2 of No. 221; 4 of No. 222.




*Above and below :* Details of the galleon's construction.
*Right :* The highfly roundabout, mechanically propelled.



by **Spanner**

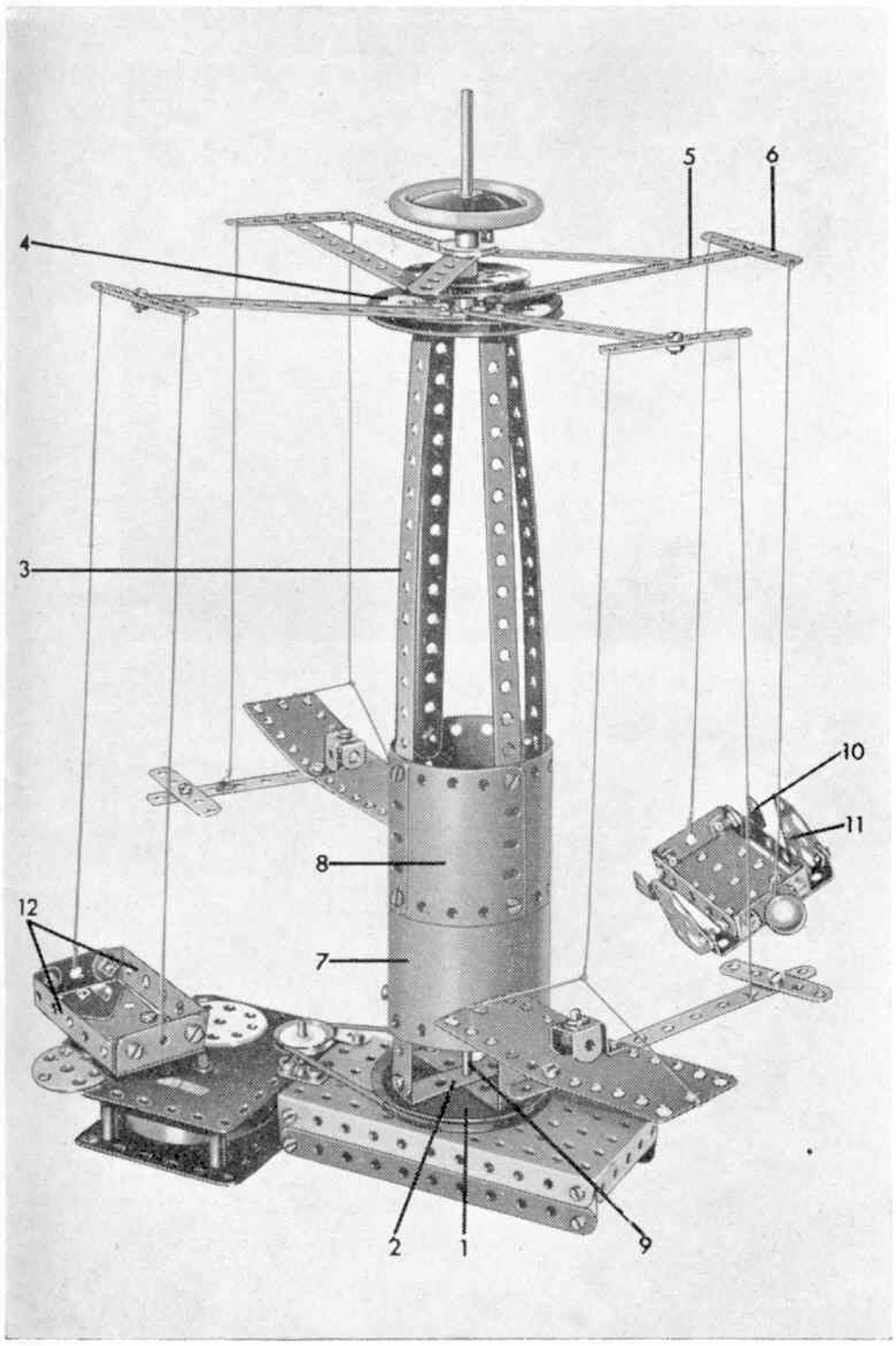
# A HIGHFLY ROUNDABOUT

NOT so very long ago, I featured in these pages an Aeroplane Roundabout, powered by one of the aircraft that actually made up the model. Now, I give building instructions for another Roundabout, only this time it is much more simple and power is supplied by a No. 1 Clockwork Motor. Again, two 'planes are included but there are another two cars also, one of which purely for the sake of description, I will call a 'swan'.

Construction is quite straightforward:

The base is composed of a $5\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flanged Plate to which two $5\frac{1}{2}$ in. Strips to give extra height are attached by Fishplates.

The Tower consists of a 3 in. Pulley 1 to which two $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strips 2 are bolted at right angles to each other. Four $12\frac{1}{2}$ in. Strips 3 are fixed to the lugs of the Double Angle Strips. At their ends, two of these Strips are connected by a $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strip which is, in turn, bolted to a second 3 in. Pulley 4.




### Forming the Arms

The remaining two Strips are attached to the Pulley by Angle Brackets, the same bolts holding two $5\frac{1}{2}$ in. Strips in place, as also do the bolts fixing the $1\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strip to the Pulley. At the end of each of the $5\frac{1}{2}$ in. Strips, which, incidentally, form the arms of the Roundabout, a $2\frac{1}{2}$ in. Strip 6 is bolted.

A $3\frac{1}{2}$ in. Rod is fixed in the boss of the Pulley 4 and on this is mounted one 2 in. Pulley, three $3\frac{1}{2}$ in. Strips, a 1 in. Pulley and a $2\frac{1}{2}$ in. Road Wheel, in that order. Although the Road Wheel in the photograph is of the old style, this can be replaced by one of the current type. The three $3\frac{1}{2}$ in. Strips, angled equally, are held in position by the 2 in. and 1 in. pulleys.

Around the Tower are fixed two $5\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flexible Plates 7, the lower bolts holding these in place also holding two Angle Brackets in position. A $2\frac{1}{2}$ in. Strip is, in turn, bolted to these Angle Brackets to strengthen the Tower. Also bolted in position, as shown, are four $2\frac{1}{2}$ in. by $2\frac{1}{2}$ in. Flexible Plates 8.

A 2 in. Pulley is fixed to the underside of the Flanged Plate forming the base, and a $3\frac{1}{2}$ in. Rod 9 is mounted, tightly, in its boss. A large Washer is then placed on the Rod followed by the completed tower. Rod 9 should pass through the $2\frac{1}{2}$ in. Strip inside the tower.

Moving on to the 'high-fliers' themselves, two aircraft are each formed from a $5\frac{1}{2}$ in. Strip to which is attached a $5\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Flexible Plate, serving as the wing, and a $2\frac{1}{2}$ in. Strip for the tail. The cockpit is a reversed Angle Bracket to which a Double Angle Bracket is bolted.

### Building the 'Swan'

To make the 'swan', two $2\frac{1}{2}$ in. Strips are fixed to the sides of a $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Plate by Angle Brackets. At each end a $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strip 10 is attached and a Flat Trunnion 11 is bolted to each lug of the forward one. A large Loaded Hook is then fixed to the front by an Angle Bracket.

The other car consists of a $2\frac{1}{2}$ in. by $1\frac{1}{2}$ in. Flexible Plate to which two Trunnions, connected by $2\frac{1}{2}$ in. by $\frac{1}{2}$ in. Double Angle Strips 12, are bolted. A $2\frac{1}{2}$ in. Curved Stepped Strip is bolted to the underside and two $1\frac{3}{8}$ in. Wheel Discs are mounted on its ends. All the cars are attached to the arms by Cord, as shown.

Power is supplied by a No. 1 Clockwork Motor carrying a 1 in. Pulley on its output shaft and fixed to the base by two Fishplates. A Driving Band connects this Pulley with the 3 in. Pulley 1, forming the base of the tower.

**Parts required :**—4 of No. 1; 8 of No. 2; 3 of No. 3; 9 of No. 5; 6 of No. 10; 2 of No. 11; 9 of No. 12; 2 of No. 16; 2 of No. 19b; 1 of No. 20a; 2 of No. 22; 2 of No. 24c; 82 of No. 37a; 82 of No. 37b; 1 of No. 38d; 1 of No. 40; 6 of No. 48a; 1 of No. 51; 1 of No. 57b; 1 of No. 90a; 2 of No. 125; 2 of No. 126; 2 of No. 126a; 1 of No. 186; 1 of No. 187; 1 of No. 188; 2 of No. 189; 4 of No. 190; 2 of No. 192.

Michael Brookfield, of Newcastle, won first prize in the 1963-64 season Meccano Building Competition with this excellent concrete mixer, incorporating a Scammell Routeman cab.

# Meccano Model Building Contest

Andrew Hill of Watford, operating the computer with which he won a prize in Section A of the last contest. The model will add or subtract positive or negative numbers ranging from —10 to +10 with an accuracy of 0·1.

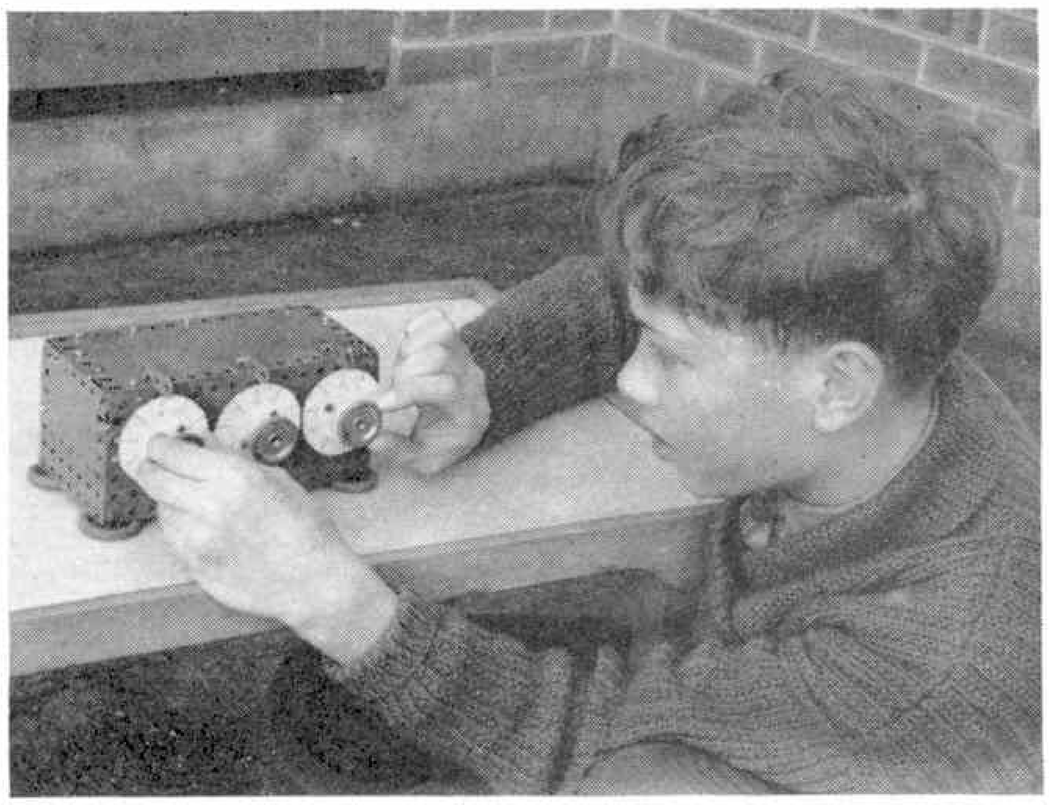
IT is our custom to hold at least one model-building competition every season and 1964-65 is no exception, therefore, intending entrants should now settle down to some serious designing. As usual the contest is open to every owner of a Meccano Outfit living anywhere in the world and no limit, maximum or minimum, is set on the number of parts which may be used. Cash prizes are offered for the best-built models of any kind, but remember also that originality counts. Models taken straight from Instruction Manuals will not, of course, be acceptable.

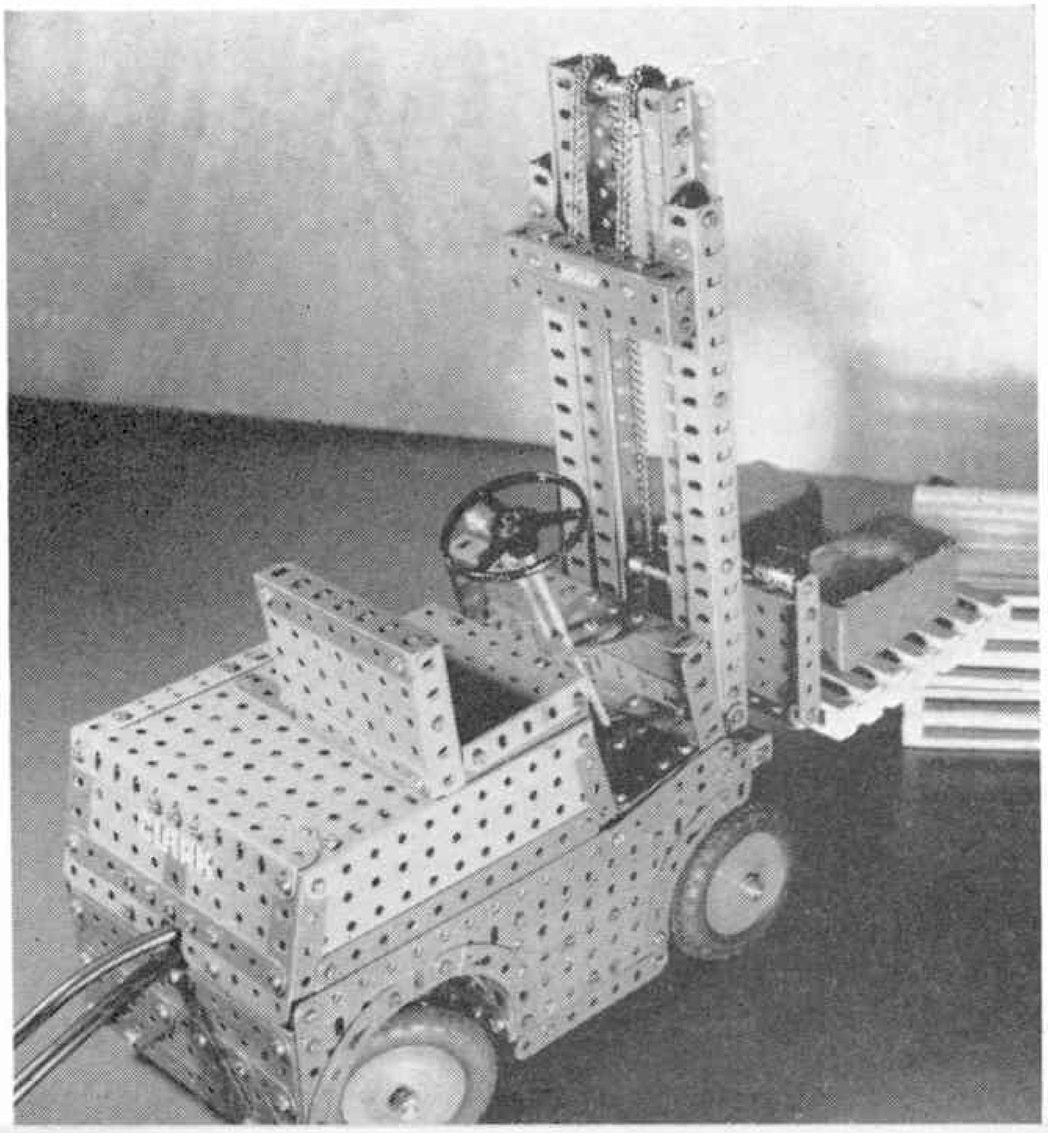
All entries will be divided into two separate sections, A and B. Section A is for competitors under 14 years of age on January 31 next, and Section B for competitors aged 14 or over on that date. Prizes in these sections are as follows: Section A, 1st. £5 5s. 0d.; 2nd. £3 3s. 0d.; 3rd. £2 2s. 0d.; ten prizes of 10s. 6d. Section B, 1st. £7 7s. 0d.; 2nd. £5 5s. 0d.; 3rd. £3 3s. 0d.; ten prizes of £1 1s. 0d.

### Picture or Sketch

Having built the model, obtain a good, clear photograph of it or, failing this, a reasonably-detailed sketch. If art is not your strong-point, then it is quite permissible to have a friend sketch it for you, but the model itself must be your own unaided work. It is also advisable to submit a short description of the main features, mentioning any points of interest you would like brought to the attention of the judges. *Under no circumstances, however, must the actual model be sent.*

To enter the contest, write your name and address on the back of each photograph or drawing, together with the letter A or B, according to the section in which you fall, and forward to: Winter Model-Building Contest, Meccano Ltd., Binns Rd., Liverpool 13. Prize-winning entries are not returnable, but unsuccessful entries will be returned if accompanied by a suitable stamped addressed envelope. Meccano Ltd. will not be responsible for any entry damaged or lost, and the judges' decisions are final.





A splendid model of a Clark fork-lift truck built by H. J. van Wijngaarden, of Amsterdam, Holland. This machine also netted a prize in the last contest.

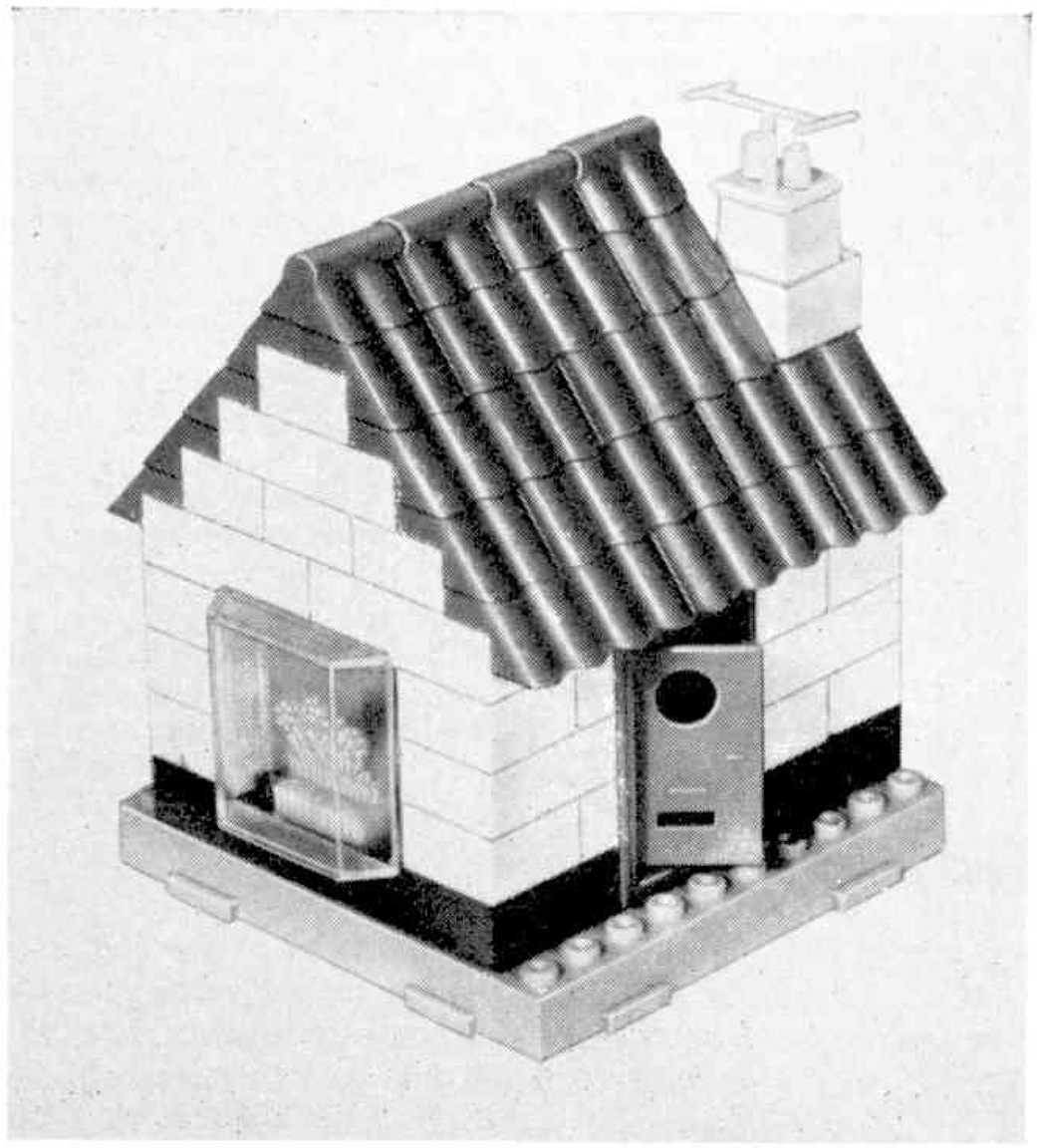
The New Meccano product

# MORE ABOUT CLIKI

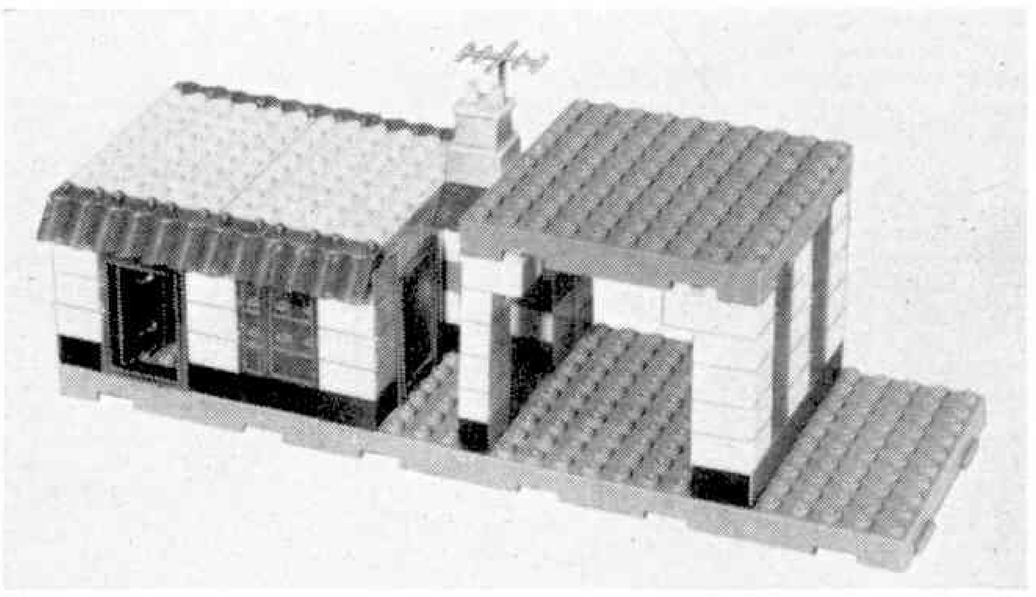
LAST month, we introduced M.M. readers to two intriguing new building systems, Cliki and Cliki-Plus, now being sold by Meccano dealers. Here are some more illustrations to show the attractive models that can be constructed with Cliki, whose colourful interlocking bricks fit smoothly into place to provide background for Dinky Toys and railway layouts in the form of houses, shops, hotels and so on. The inclusion of axle blocks, axles and road wheels enables builders to construct simple push-along toys which will especially appeal to younger members of the family.

When you buy a Cliki set you will find that it contains fully-illustrated, step-by-step instructions on how to build a model which makes use of all the important parts in that particular set. This enables you to master very quickly the method of construction and from that point onwards your imagination will prompt you into building free-style models of your own. This is one of the aims of Cliki—to encourage you to use your own imagination and skill. For the sake of readers who did not see last month's M.M. there are four Cliki Sets. Prices in the United Kingdom are as follows: C1, 9s. 11d.; C2, 15s. 6d.; C3, 25s.; and C4, 42s. 6d. In addition, separate parts are available in small packs known as Cliki Add-Ons, and these are all priced at 2s. 6d.

In subsequent issues of the M.M. we will describe models you can construct with that other fascinating new building toy, Cliki-Plus.

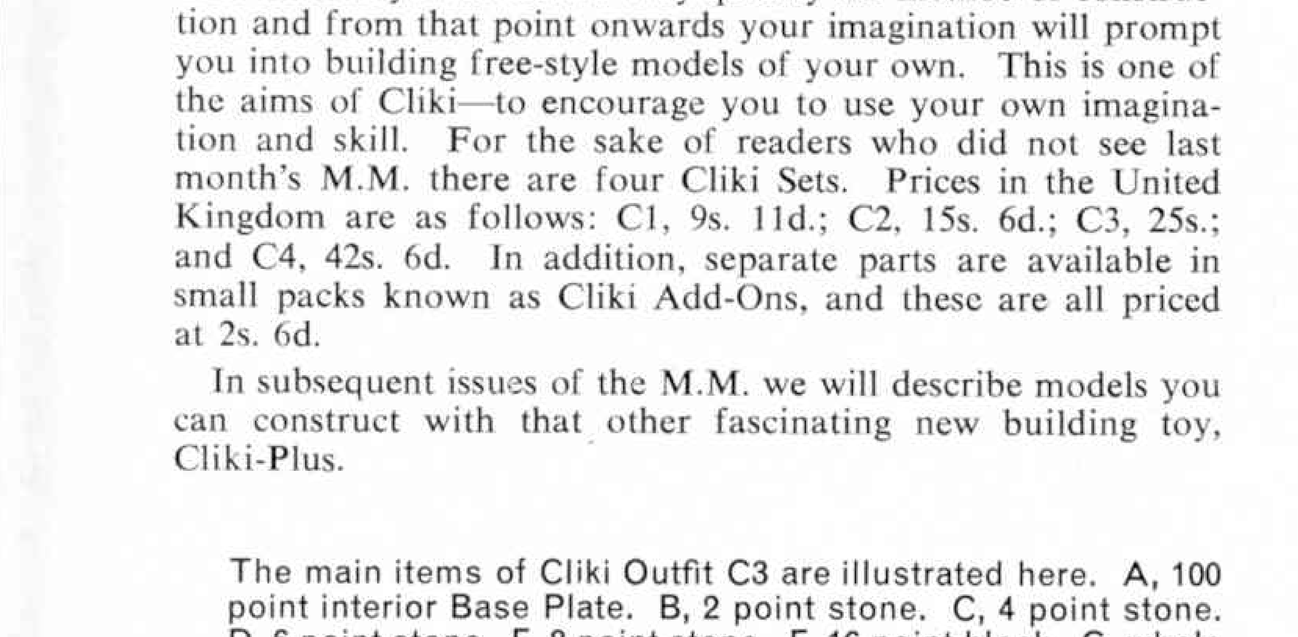


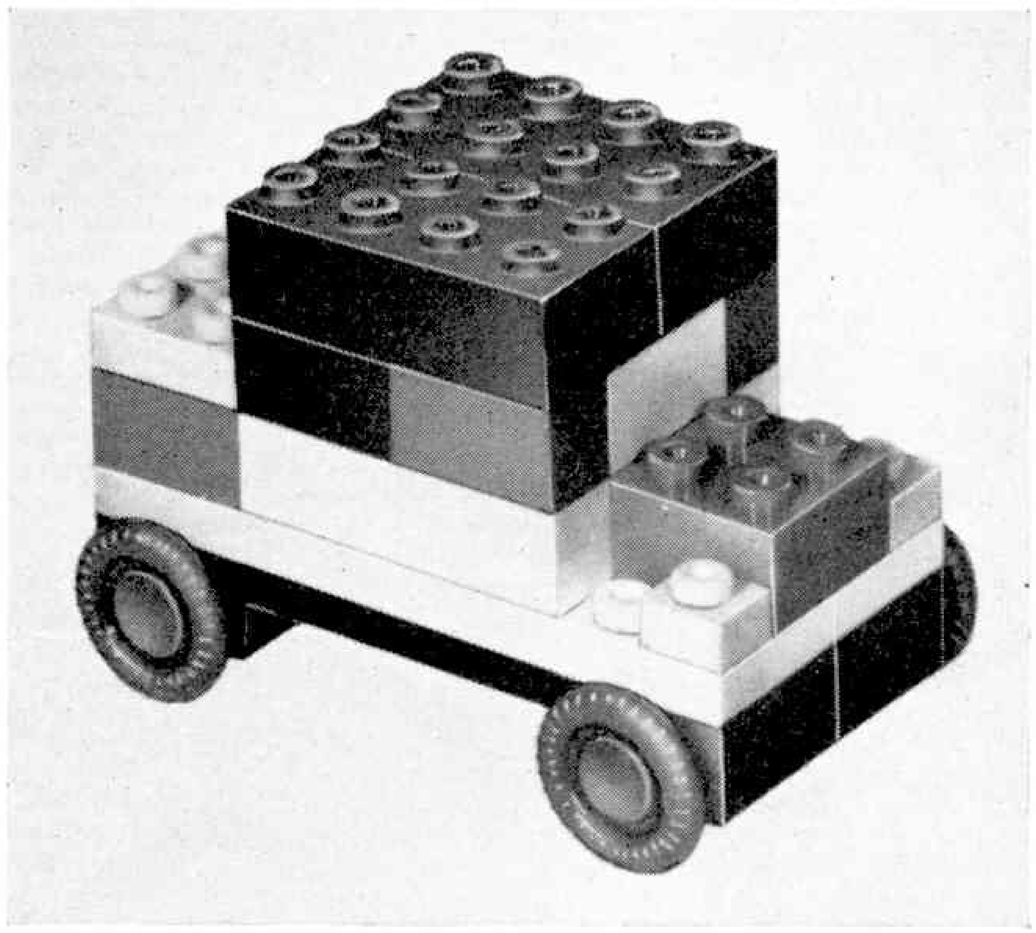
Build this bungalow from instructions in Cliki Outfit C2.

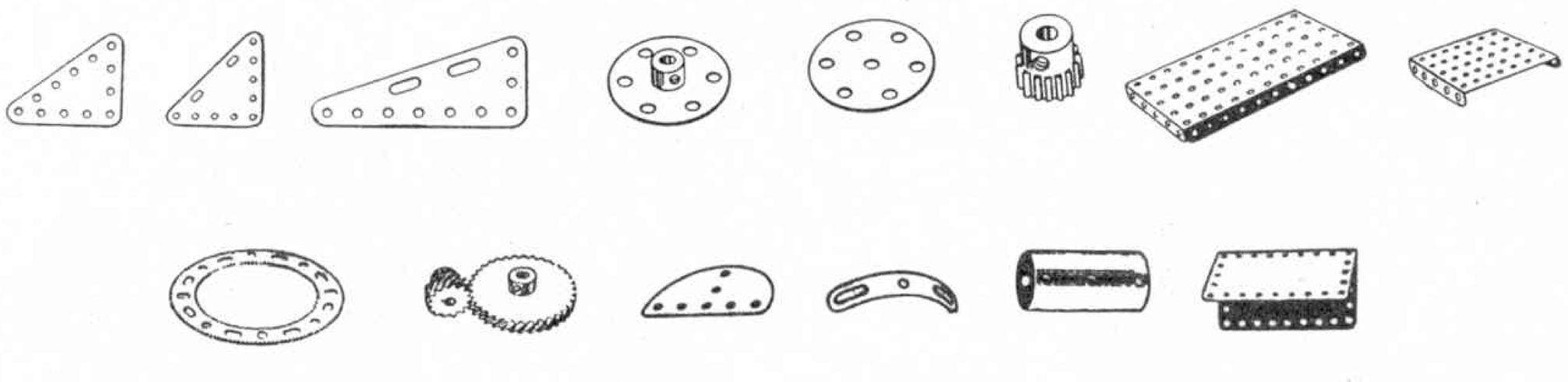


*Above:* Full instructions are given with Cliki Outfit C3 for this modern house. *Below:* Axle Blocks, Axles and Road Wheels are included to construct push along toys as illustrated.

The main items of Cliki Outfit C3 are illustrated here. A, 100 point interior Base Plate. B, 2 point stone. C, 4 point stone. D, 6 point stone. E, 8 point stone. F, 16 point block. G, whole ridge tile. H, whole roof tile. I, flower box. J, 1 point stone. K, half ridge tile. L, half roof tile. M, opening door and frame. N, opening window and frame. O, chimney stack and T.V. aerial. P, bay window. Q, 8 point axle block, axle and two road wheels.





# Dealers who specialise in Meccano spare parts

*Listed below are some of the dealers who sell Meccano accessories and spare parts. This is intended to aid enthusiasts—and there are many of them—who constantly require additional spare parts for their Sets. All dealers can, of course, order Meccano spare parts for their customers, but those listed here are among our spare part specialists.*

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by **Spanner**

# BUILD A DELIVERY VAN

A COMMON sight in every town and city is the tradesman's van rushing busily about, delivering orders here, picking up merchandise there; zooming from door to door with practised efficiency. The Meccano model described here is reminiscent of the Bedford 15 cwt. van, often used for this type of work.

A simple chassis is built-up from two 12½ in. Angle Girders connected, at the front, to a 5½ in. Strip 1 by Angle Brackets. Bolted across the Girders are another 5½ in. Strip 2, two 5½ in. by 2½ in. Flexible Plates, a 2½ in. by 2½ in. Plastic Plate, and a 5½ in. by 1½ in. Flexible Plate 3. An Angle Bracket is fixed to each end of Strip 2, and to each rear corner of Plate 3. Also fixed to the Girders is a compound 4½ in. strip 4, angled as shown, made up from 3 in. Strips.

Both sides of the model are similarly formed. Attached to a 12½ in. Strip 5 are two 2½ in. by ½ in. Triangular Flexible Plates, a 2½ in. by 2½ in., a 4½ in. by 2½ in. and a 2½ in. by 1½ in. Flexible Plate, followed by a 2½ in. by 1½ in. Plastic Plate, the last overlapped by a 2½ in. Strip 6. A 3½ in. Strip is attached to the lower inside edge of the 2½ in. by 1½ in. Flexible Plate. Bolt 7, holding the first Triangular Flexible Plate in position, also holds an Angle Bracket 8, while Bolts 9 carry Obtuse Angle Brackets.

A compound 9½ in. strip 10 is formed from a 5½ in. and a 3½ in. Strip. To this are attached a 2½ in. Strip, two 2½ in. by 2½ in, one 2½ in. by 1½ in., another 2½ in. by 2½ in. Flexible Plate and, finally, a second 2½ in. Strip 11. The whole arrangement is then fixed to the Obtuse Angle Brackets held by the rear two Bolts 9. At the top, the Plates are edged by a 10½ in. compound strip 12, built up from two 5½ in. Strips, the same bolts also holding the Plates, forming the roof, in place. The roof itself is composed of four 5½ in. by 2½ in. and one 5½ in. by 1½ in. Flexible Plates, strengthened inside by a 5½ in. Strip held by the three Bolts shown in the illustration.

An Obtuse Angle Bracket and a 1½ in. Strip 13 is bolted to the free lug of Angle Bracket 8 on each side. In turn, two 2½ in. by 1½ in. Flexible Plates 14 and 15 are fixed to the spare lugs of each of these Obtuse Angle Brackets. Plates 14 are joined together, but Plates 15 are bolted to 5½ in. Strip 1, at the same time securing Reversed Angle Brackets 16 in position.

Three 3½ in. Rods, held in a 2½ in. by 1½ in. Flanged Plate, serve as the radiator-grille. The Flanged Plate is attached to the chassis members by Double Brackets. Two headlamps are represented by 1 in. Pulleys without boss bolted to Flexible Plates 15, while the front bumper is a 5½ in. Strip, extended at each end by a Formed Slotted Strip, and fixed to Reversed Angle Bracket 16, Fishplates being used as overriders.

An Angle Bracket 17 and 2½ in. Strip 18 are attached to each of the Obtuse Angle Brackets held by the front Bolts 9. The other ends of the Strips are bolted to the roof, the same bolts also holding further Angle Brackets in place. A 4½ in. by 2½ in. Transparent Plastic Plate, overlaid along its lower edge by two 2½ in. Strips, is bolted to these Angle Brackets and Angle Brackets 17. Each of the bolts fixing the Plate to Angle Brackets 17 also secures a Fishplate and to these is bolted a 5½ in. Strip 19. Above the windscreen, a lip is made by attaching a compound 4½ in. strip (obtained from two 2½ in. Strips) to the roof with Obtuse Angle Brackets.

To complete the body, only the door now remains to be built. A 1½ in. by ½ in Double Angle Strip is bolted to 2½ in. Strip 11 and another 1½ in. by ½ in. Double Angle Strip 20 is pivotally connected to this by a 2 in. Rod, held in place by a Spring Clip. A door, built-up from two 4½ in. by 2½ in. Flat Plates and a Flat Trunnion 21, is fixed to Double Angle Strip 20 by a Fishplate. A Threaded Pin 22 is mounted in position, then an Angle Bracket 23 is bolted to the rear off-side wing. The door is secured by lifting it slightly and slipping Flat Trunnion 21 behind the lug of this Angle Bracket.

## Steering Arrangement

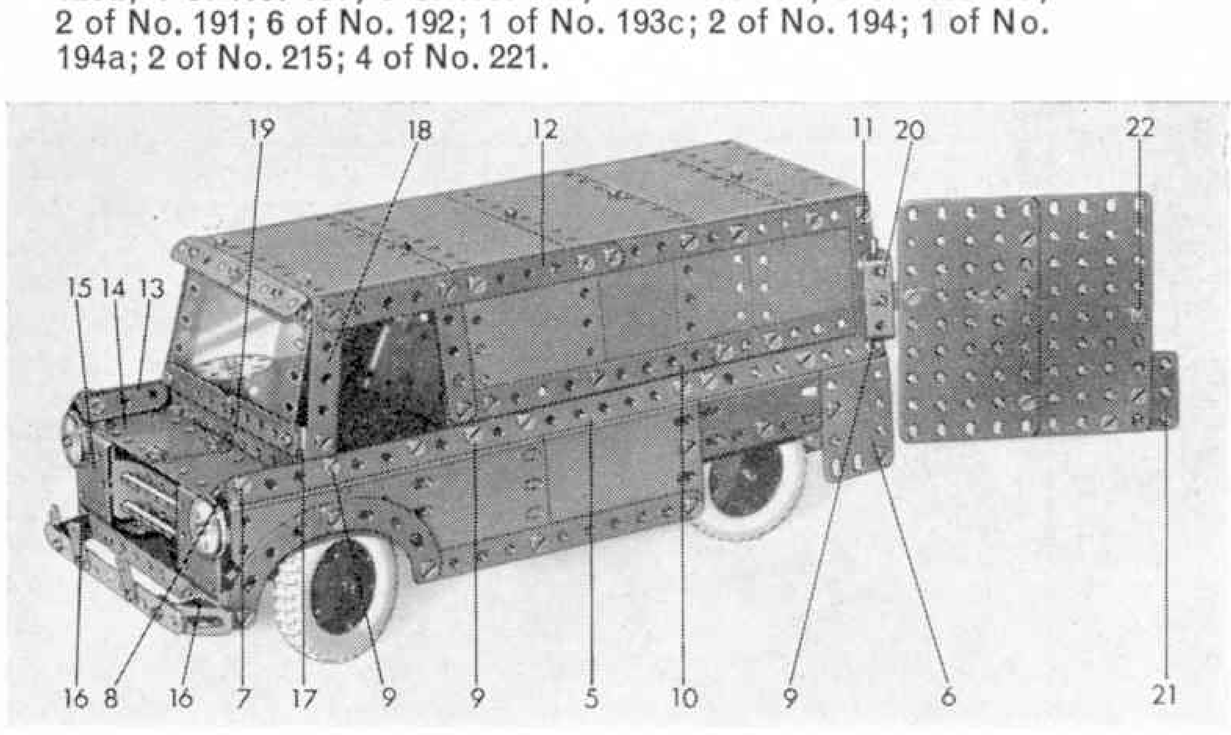
Two stub-axle constructions are similarly built. A ⅜ in. Bolt is used to fix a 1½ in. Strip 24 to a Double Bracket, which is then lock-nutted through the end hole of compound strip 4. Another compound 4½ in. strip 25, made up from two 2½ in. Strips, is lock-nutted between Strips 1 and a Fishplate 26 is tightly fixed to it. The axles themselves are 1½ in. Rods mounted in the lugs of the Double Brackets and held by 2½ in. Road Wheels and Collars.

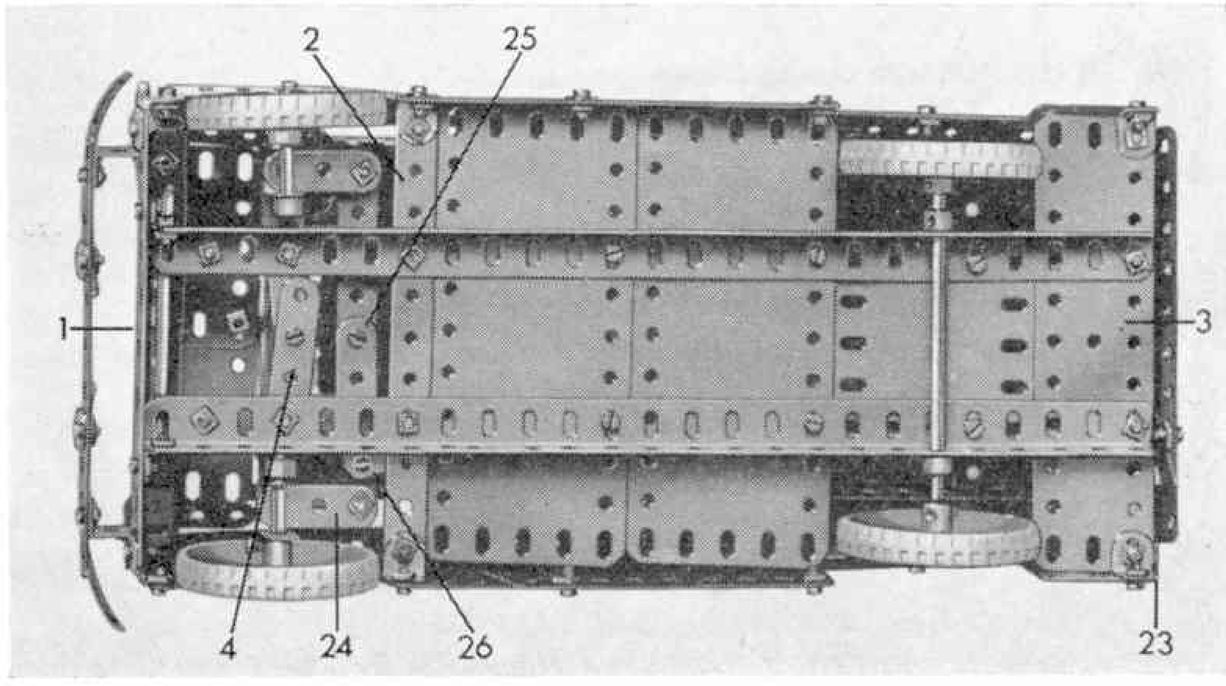
Acting as the steering column is a 2 in. Rod journalled in the lugs of a 1 in. by ½ in. Double Bracket fixed to Strip 19. An 8-hole Bush Wheel is mounted on each end of the Rod, the upper one serving as the steering wheel. A ½ in. Bolt secured through one hole in the lower Bush Wheel fits into the elongated hole of Fishplate 26, but note that it is *not* bolted to the Fishplate. Both front wheel arches are edged by two 2½ in. Stepped Curved Strips.

The rear axle is a 5 in. Rod, journalled in the chassis members and held by Collars, on which two 2½ in. Road Wheels are mounted.

Finally, a seat is produced from two 5½ in. by 1½ in. Flexible Plates connected by Angle Brackets, and is fixed to the floor with two compound 1 in. by 1 in. reversed angle brackets, each composed of two 1 in. by 1 in. Angle Brackets.

**Parts required :**—2 of No. 1; 14 of No. 2; 4 of No. 3; 2 of No. 4; 14 of No. 5; 4 of No. 6a; 2 of No. 8; 6 of No. 10; 4 of No. 11; 1 of No. 11a; 15 of No. 12; 4 of No. 12a; 12 of No. 12c; 1 of No. 15; 3 of No. 16; 2 of No. 17; 2 of No. 18a; 2 of No. 22a; 2 of No. 24; 7 of No. 35; 145 of No. 37a; 136 of No. 37b; 15 of No. 38; 2 of No. 48; 1 of No. 51; 2 of No. 53a; 4 of No. 59; 4 of No. 90a; 1 of No. 111a; 4 of No. 111c; 1 of No. 115; 2 of No. 125; 1 of No. 126a; 4 of No. 187; 8 of No. 188; 4 of No. 189; 8 of No. 190; 2 of No. 191; 6 of No. 192; 1 of No. 193c; 2 of No. 194; 1 of No. 194a; 2 of No. 215; 4 of No. 221.




*Above:* The completed Delivery Van. *Below:* An underneath view showing the steering arrangement and chassis.

# BUILT FOR SPEED!

## THE RALEIGH ROAD SPORTS RANGE

These four models from Raleigh are the finest low-cost road sports cycles you can buy. Study the specifications, compare the prices, and you'll see that they offer quite remarkable value. Available from all good cycle dealers.

### *RECORD*

**TO SPECIAL ORDER**

SPECIFICATION: **Frame:** 21½ in, 22½ in, 23½ in. Head and seat angles 72 deg parallel, 'Sportif' lugs. Wrapover seat stays. Oval section forks with forged crown. **Wheels:** Weinmann alloy HP rims, with 27 in x 1¼ in Dunlop Sprite tyres. Alloy quick release hubs. **Handlebar:** GB Embossed Ventoux 15/16 in dia with GB alloy stem, sizes according to frame. **Brakes:** GB 'Coureur 66' with quick release. **Gears:** Cyclo Benelux P2, 5-speed. **Chainwheel:** Williams C.34, 3-pin detachable. **Pedals:** Brampton B.8 Quill pattern. **Saddle:** Brooks B.15 NSPF. **Equipment:** Sprint Veloce pump. Prices: from **£37.16.0.**
**Optional extras:** Cyclo Benelux P.2 10-speed gears. Campagnolo 'Gran Sport' 5- or 10-speed gears. Williams AB.77 'Cotterless' double chain set. Campagnolo 'Record' quick release hubs, and all-Chrome finish with panelling.
**COLOURS:** Competition Blue, British Racing Green, Equipe Red or Black. All with chrome-plated crown, tips, head lugs and rear ends. Chrome tape seat tube bands.

### *RAPIER*

SPECIFICATION: **Frame:** 21½ in, and 22½ in. Head and seat angles 72 deg. parallel, Italian style lugs. Wrapover seat stays. Oval section forks with forged crown. **Wheels:** Dunlop HP Rims with 27 in x 1¼ in Dunlop Sprite tyres. **Handlebar:** Maes pattern, GB alloy with Milremo alloy stem. **Brakes:** GB 'Coureur 66' with quick release. **Gears:** Huret 'Allvit' 5-speed. **Pedals:** Brampton single-sided racing pattern. **Saddle:** Lycett L.15 NSPF **Equipment:** Polished alloy pump. Prices: from **£25.9.6.**
**COLOURS:** Flamboyant Sunset Yellow with Green/White head and seat panels, or Flamboyant Burgundy with Powder Blue/White.

### *ROYALE*

SPECIFICATION: **Frame:** Gent's 21½ in, 22½ in. Lady's 21½ in. Head and seat angles 72 deg. parallel. Cutaway lugs. Wrapover seat stays. Oval section forks with forged crown. **Wheels:** 27 in x 1¼ in Endrick with Dunlop Amber Sprite tyres. **Handlebar:** Maes steel with Milremo light alloy stem. **Brakes:** Gent's GB 'Coureur 66' with centre pull 'Arret' levers. Lady's, GB 'Sprite' with 'Sprite' levers. **Gears:** Gent's, Cyclo Benelux Mark 7 10-speed gears. Lady's, single chainwheel. **Pedals:** Resilion lightweight. **Saddle:** Gent's, Lycett L.15 NSPF. Lady's, Lycett L.15 standard. **Equipment:** Apex alloy pump. Prices: from **£24.9.6.**
**COLOUR:** Royal Carmine with Gold edging, Black and Gold banded seat tube. Bronze Green mudguards.

### *RAPIDE*

SPECIFICATION: **Frame:** 21½ in, 22½ in and 23½ in. Head and seat angles 72 deg. parallel. 'Rapide' cutaway lugs. Wrapover seat stays. Oval section forks with forged crown. **Wheels:** Dunlop HP Rims with 27 in x 1¼ in Dunlop Sprite tyres. Resilion large flange hubs. **Handlebar:** Maes GB alloy 15/16 in dia. with light alloy stem, sizes according to frame. **Brakes:** GB 'Coureur 66' with quick release. **Gears:** Cyclo Benelux P.2 5-speed. **Pedals:** Brampton single-sided racing. **Saddle:** Brooks B.15 NSPF. **Equipment:** Apex alloy pump. Prices: from **£28.19.6.**
**Optional extra:** Cyclo Benelux P.2. 10-speed gears.
**COLOURS:** Flamboyant Red with Green/White head and seat panels or Black with Ice Blue/White. Chromium plated head lugs and 10-in front fork.

# RALEIGH

A member of the Group of Companies

R17

A fine model of the Wills 'Eshton Hall' fully painted and lined out.

# Locomotive Kit construction

by **Linesman**

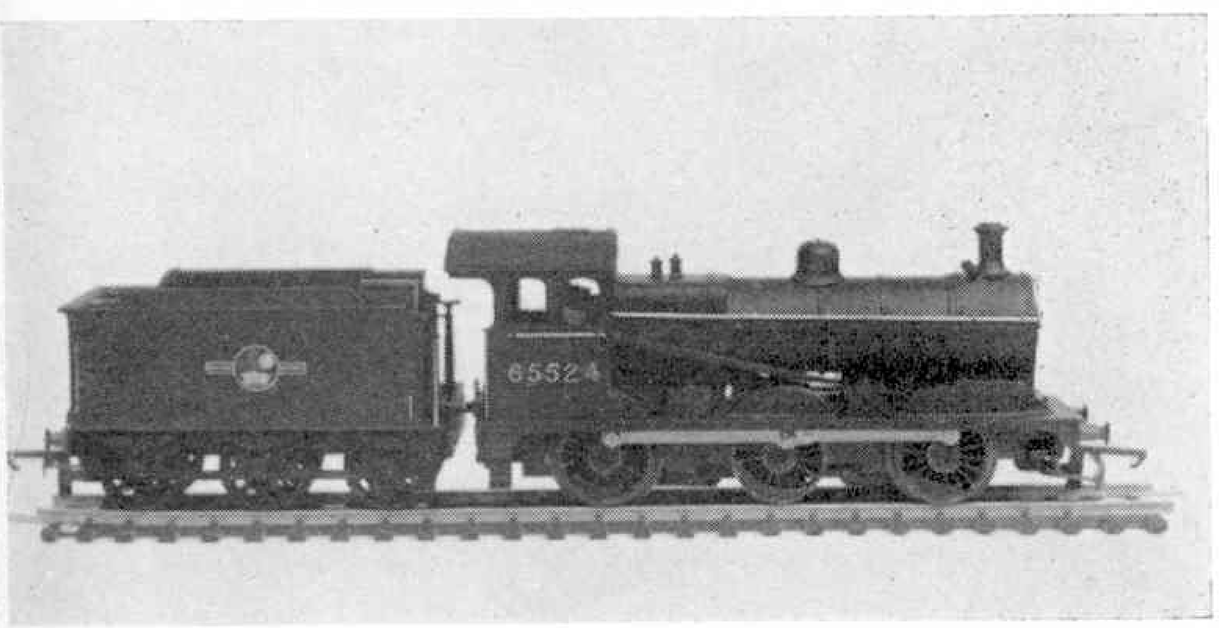
LAST month, I dealt with the assembly of the different types of white metal kits now available to the enthusiast. The final task, and one which I want to discuss now, is the finishing of the models, including the rather difficult task of painting and lining.

Before the painting or lining of a kit is attempted, its surface should first be cleaned. This can easily be achieved by rubbing down with an old toothbrush dipped in a stiff solution of Vim and water. This removes any impurities from the casting and allows the paint to spread more evenly. The solution of Vim should later be removed by dipping the model in a bowl of clean water. This will then probably reveal the small gaps between the parts of the kit which have to be 'filled'. The filling compound, once dry, should be rubbed over with emery paper so that a smooth and even surface can be provided for the final painting. Only the finest grade of emery paper should be used to clean the surface of the castings once the model has been assembled.

Emery paper makes tiny grooves in the surface of the casting which help to 'key' the paint to the metal and prevent the paint from peeling. In most cases, the final livery of a model will vary according to whether it is painted in pre-nationalisation, pre-grouping, or British Railways' colours. A simple case in point is the K's Kirtley goods locomotive which, if painted in its original Midland Railway livery, would have a basic colour of Midland red, edged with black, with a fine straw line on its inner edge. Its boiler bands would be painted black with fine straw lines on either side.

The same locomotive painted in London Midland and Scottish Railway colours would have a coat of matt black with red buffer beams, with L.M.S. transfers. The British Railways' livery for this locomotive is also black with, of course, the British Railways' emblem. You will see, therefore, that more skill will be needed to paint this particular locomotive in its pre-grouping livery than in British Railways' or L.M.S. colours. It is usually pre-grouping colours that confuse enthusiasts, because of the ornate bordering and lining that such locomotives had.

The Bec OO gauge L.N.E.R. J17 kit painted in British Railways' livery with B.R. numbers.




## What you will need

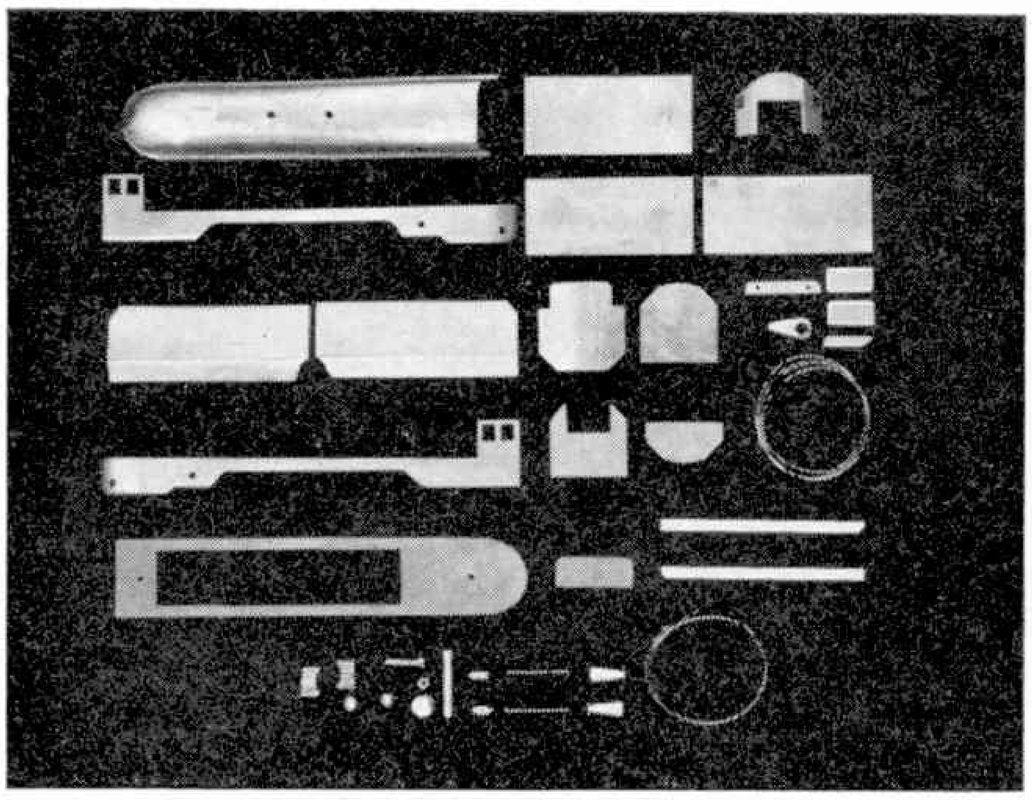
The instruments and materials needed to paint most locomotive kits should include a draughtsman's lining pen, for painting the fine lines often found in pre-grouping and pre-nationalisation locomotives. Spring bow compasses and a mapping pen will also be found useful for this operation. Suitable sizes of paint brush for bordering and for painting on the basic colour, are camel hair brushes Nos. 0, 00, 1, 3 and 4. The colours will, of course, vary according to the locomotive period and livery, but in general, the pre-group liveries may call for colours not readily available and it may be necessary to mix them yourself.

Oil paints currently available and suitable for the purpose are produced by Humbrol, Rocket Precision, Bonds, C.C.W., Windsor and Newton, and E.A.M.E.S. Joy, O'My and Pucka produce cellulose enamels. Water colours are sometimes used for lining locomotives and are manufactured by Reeves and by Windsor and Newton. Joy and Pucka produce cellulose oil thinners for their paints and Humbrol manufacture oil thinners suitable for the different varieties of oil paint.

In all cases, irrespective of the period the locomotive is to represent, the basic colour is applied first, either with a brush or a spray. Since spray painting requires a technique of its own, I will deal with that later in the article.

## Golden rule

Using a fairly large brush such as a 3 or 4 camel hair brush, I would suggest that two thin coats of paint be applied. This is



Parts of the E.A.M.E.S. 'Coronation' class Pacific locomotive kit. All parts are stamped out of nickel silver sheet or brass.

far more effective than one thick one. A technique that can usually be relied upon when applying the first and subsequent coats of paint is to brush the paint in one direction only—usually in the longest direction—the tank's front cab to the smokebox; the cab roof, from side to side and so on. The boiler, however, should always be painted round its circumference, since this seems to emphasise its curvature.

The golden rule of painting any model is never to return to parts on which the paint is still wet; always wait until the paint has dried and then apply another coat. It will be found that the first coat, if properly applied, will not cover the surface of the model very adequately. In fact, supposing that black is the colour of the model, it will be found that the paint will have a greyish look, because of the sheen of the metal showing through.

Only a small area of the model should be covered at any one time and only small quantities of paint should be used on the brush. The paint should always be spread as thinly and as evenly as possible, so that the risk of small blobs collecting and obscuring detail is reduced to a minimum. Subsequent coats of paint should be applied only when the preceding coat has dried completely and equal care should be taken in applying all subsequent coats. If one of the jelly-base paints is used, only two coats will be necessary, but if a thinner type of paint is applied, three or four very thin coats would be preferable to two thick ones. Care must be taken at all times to ensure that no paint clogs up the detail on the castings.

If a spray gun such as the 'Celspray', which is sold at most model shops, is available, the paint should be thinned down to a consistency that allows a very fine spray to pass from the gun. Because of this, it will probably be necessary to give the locomotive three or more coats of paint. When spraying the model, the gun must be passed from left to right, squeezing the rubber bulb supplied with the gun as the spray is moved. If a foot pump is fitted, the pedal must be pressed when the spray gun is moving. If the spray gun is used in this manner, blobs that usually hide the detail on the model do not have the opportunity to form.

## Attractive finish

A more attractive eggshell finish will result if a cellulose-base enamel is used on the model, but none of these paints are supplied in a matt finish and if you want a finish of that type, you will need to give your model a coat of matt varnish when it has dried.

One advantage of using cellulose paint is that subsequent lining can be done with oil paint, which is easily removed if any errors occur. In most cases it will be found satisfactory to spray the model at a distance of approximately eighteen inches, so that only the finest spray mist covers the casting. If the paint becomes too 'watery', because of excessive thinning, the result may well prove disappointing, so I would suggest that you experiment a little to discover the right consistency of paint and thinners.

Different paints have different textures, but working by rule of thumb, I would suggest a mixture of three parts thinners to one part paint, if a spray is used. This will not apply to jelly-type paint which will require much greater thinning. Cellulose and oil paints *must not be mixed* and the two types of paint must not be applied in alternate layers, since the cellulose paint shrinks and would thus cause the oil paint to peel and crack. Oil paint can be applied on top of cellulose, but it is very unwise to apply cellulose on top of oils.

If the model is to be painted in a pre-grouping livery, you will probably find that the side tanks or cab sides have borders of a different colour to either the lining or the locomotive. Borders should be painted with the finest brush available and I would recommend the use of water colours, since they can easily be wiped off if mistakes are made. If the water colour mixture is excessively thin, however, the bordering will be very indistinct.

Linings are sometimes found at the edge of borders and sometimes are entirely separate from them, although there are many cases where lining is applied to both the border and the insides of the locomotive tank and cab side. A draughtsman's lining pen can be used for straight lining and a spring bow compass for sections that follow curved contours. Where boiler bands and other items on a curved surface are to be painted, I would again recommend the use of a very fine brush.

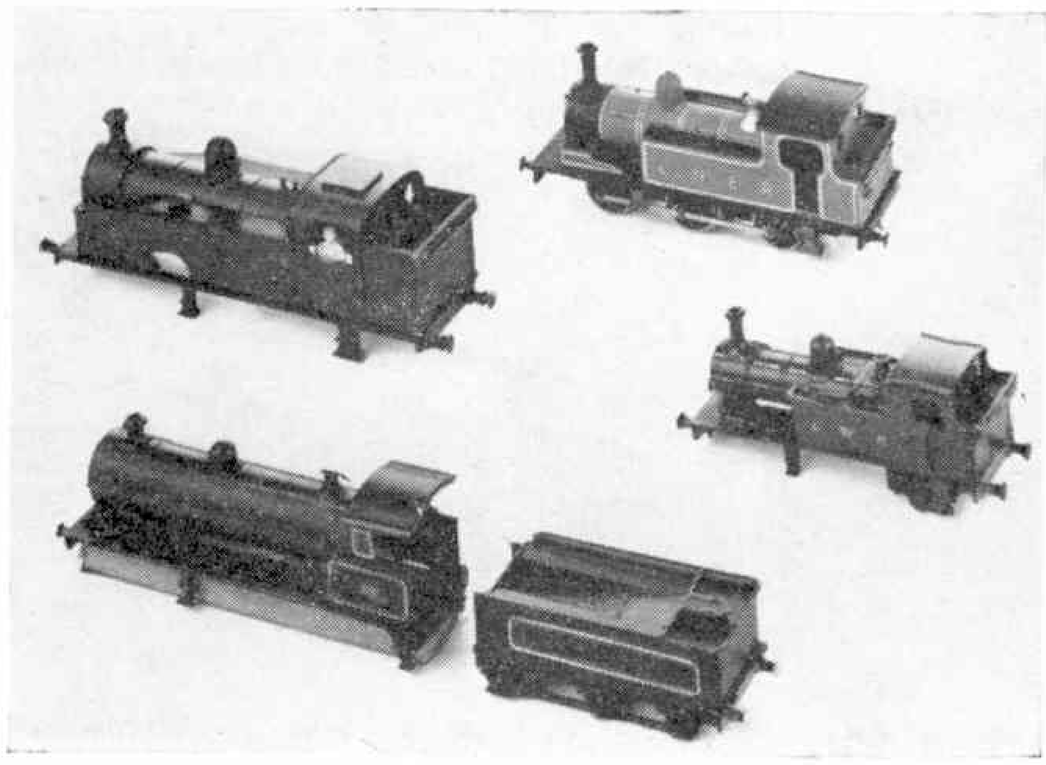
## An alternative

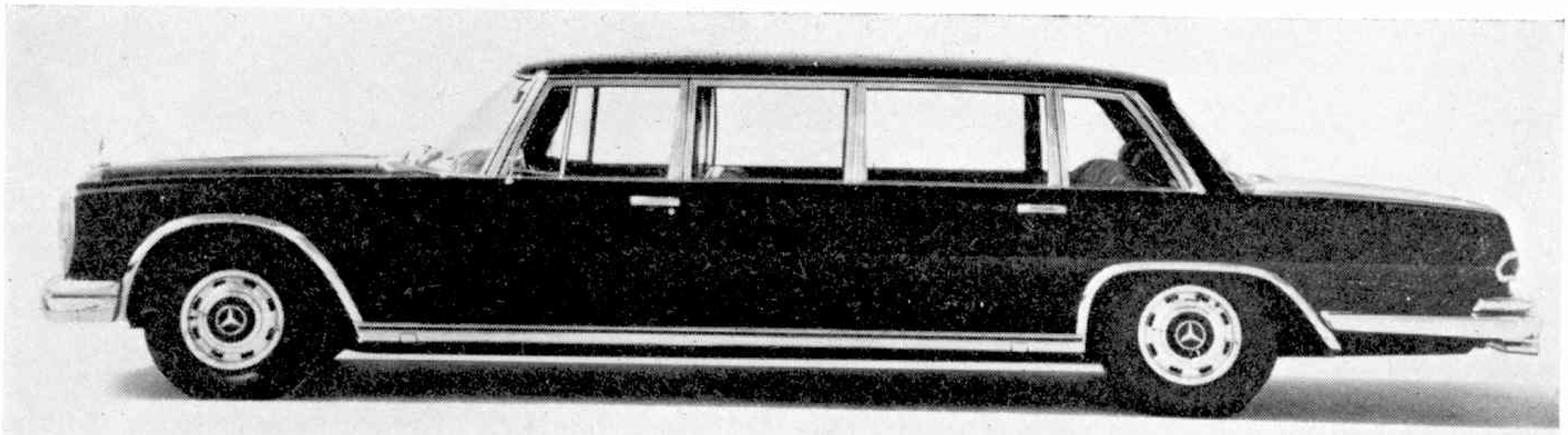
As an alternative to water colours for lining and bordering, oil colours suitably thinned down for the purpose can be applied. If a cellulose paint has been used for the base colour, oil colours can be introduced for the lining.

Finally, I want to mention a type of kit which I intend dealing with more thoroughly at a later date. An example from this series of kits is illustrated here and you will notice that the parts are produced, not in the more usual white metal, but in nickel silver. Rather more skill is required in building this kit than in assembling other kits and a knowledge of soldering is essential. The parts are all stamped and shaped from nickel silver sheet, which should be soldered together in the appropriate places.

The parts illustrated form a kit for a model of one of the 'Coronation' class Pacific locomotives of the London, Midland and Scottish Railway. The kit, when built, fits on to a Hornby-Dublo 'City of London' chassis to give a most effective addition to any two-rail model railway.

*At the top:* The K's OO gauge L.N.E.R. J72 kit painted and lined out in the appropriate livery. *Below and to left:* K's J50 kit partly finished in British Railways' black. *To the right:* Gem TT gauge 'Collet' tank kit which is painted in Great Western standard green. *Bottom:* The Gem L.N.W.R. 'Prince of Wales' 4-6-0 kit, TT gauge.





The Mercedes-Benz 600 is the basis of the latest model to be introduced to the Dinky Toys range.

# NEW MERCEDES LIMOUSINE

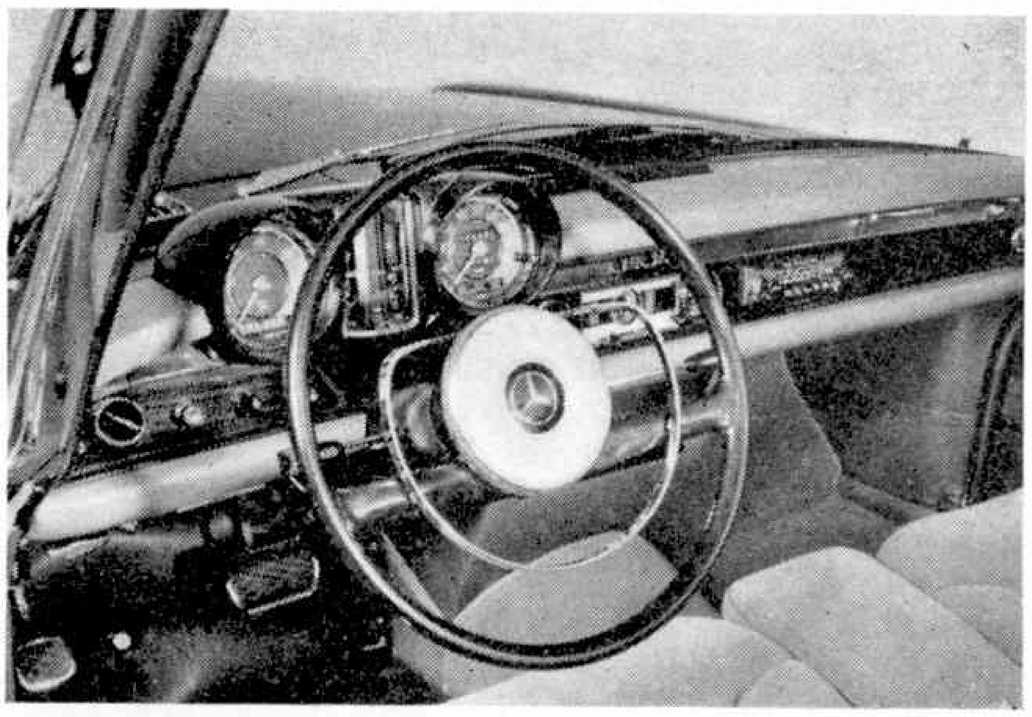
by **Chris Jelley**

IT is true to say that Meccano Ltd. were pioneers of mass-produced die-cast model cars and among the world's oldest manufacturers of real cars is Daimler-Benz, of Germany. It is hardly surprising, therefore, that the two companies should team up from time to time and the latest result of this association is that a brand new Dinky Toy hits the miniature scene. Already this has happened with model No. 186, Mercedes-Benz 220 SE, which appeared in February 1961. Now, history repeats itself to give model No. 128 — Mercedes-Benz 600, dubbed 'The Grand Mercedes' by Daimler-Benz.

It would not be an exaggeration to describe this replica as the ultimate in modelled miniatures. In my own opinion it is by far the best model of its type to emerge from the factory at Binns Road, but most important of all, it wins yet another first for Dinky Toys—four opening doors! And that is only part of the story—all the doors are actually 'upholstered'! These features in themselves, are enough to make the model unique in its class, but our designers have not stopped there. All the usual standard extras are present, including Prestomatic steering, four-wheel suspension, interior fittings, etc., plus plated radiator and front bumper, clear 'glass' headlamps, opening boot and opening bonnet, in addition to a detailed engine and new-type wheel hubs.

Sitting inside this luxurious limousine are a uniformed chauffeur and two back-seat passengers, a man and a woman.

The luxuriously appointed Mercedes rear compartment.



The dashboard of the Mercedes-Benz with adjustable safety steering wheel and foot-operated parking brake.

The latest Mercedes-Benz 600 seen together with the first post-war model—the 170C Cabriolet of 1951.

I am sure these many appealing aspects will impress collectors and the overall size and quality of the car will emphasise the model's attraction. It is scaled to the now standard 1:42 and dimensions are: length, $5\frac{13}{16}$ inches; width, $1\frac{55}{64}$ inches; height, $1\frac{15}{32}$ inches; wheelbase, $3\frac{5}{8}$ inches. Finish is in a luxurious flamboyant carmine with soft, blue-grey interior and black base. Considerable chassis detail is represented on the base, which is die-cast. Attention to detail has continued right down to the tyres which carry the word 'Dunlop' on the side. This has been done with the full co-operation of the Dunlop Rubber Co. Ltd., of

Birmingham, whose name will now appear on all Dinky Toys' tyres.

Our pictures of the Mercedes show the real car. You will find an illustration of the model, in colour, on our advertisement pages.

Daimler-Benz produce the actual Mercedes in two forms, a 5-6 seater saloon and a 7-8 seater Pullman limousine, but the engine and performance is the same in both versions. I should mention, incidentally, that we have modelled the limousine. Externally, the two versions are roughly similar except that the limousine has an extra section in the middle, between the front and rear doors, increasing its overall length from the saloon's 18 feet 2 inches to 20 feet 6 inches. Other dimensions are: width, 7 feet 3 inches; height, 4 feet 11½ inches; wheelbase, 12 feet 9½ inches.

An essential part of any car is, of course, the power plant. It is no use having a big, powerful-looking vehicle if the engine is not up to the work expected of it, so how does this apply to the Mercedes? Of all motor manufacturers, Daimler-Benz are the least likely to produce an inefficient engine. After all, they have had more than half a century of experience and have always been famous for the units they make. As might be expected, this latest giant is no exception.

A completely new eight-cylinder engine, developed from the principles proved in hundreds of thousands of Mercedes cars, has been designed for the new car. It has the enormous capacity of 6,329 c.c. and develops a maximum gross power output of 300 horse power at 4,100 r.p.m. Transmission is via a fully-automatic four-speed gearbox, drive being determined by a lever on the steering column.

All this gives you some idea of the mechanical specifications, but it is also interesting to take a look at those aspects most likely to affect the average passenger, namely comfort and safety. Being a limousine, there is a partition separating the driver's compartment from the rest of the car. Seating is in three rows, the rear two rows facing each other and the seats are deeply cushioned and comfortable. A separate heating and ventilating system is fitted in both compartments, with full air-conditioning as an optional extra.

Perhaps the most novel feature, however, is the hydraulic push-button operation for adjusting front seats and seat-backs, opening and closing windows, including the glass partition behind the front seats, a sliding roof, the bonnet and boot lid and even for closing the doors. On the safety side, there is power steering, air suspension, adjustable shock absorbers and disc brakes on all wheels.

One final comment before moving on to our second model of the month—which is a Christmas special. The information I have received from Daimler-Benz about this elegant limousine is headed 'A new Prestige Car from Daimler-Benz'. The same could well apply to the Dinky replica!

Although it is a bit early for us to be seriously thinking of Christmas, you can rest assured that most parents have already started planning and even buying presents. This month, therefore, we introduce a novelty model intended especially for the festive season. The toy is based on No. 475 Model T Ford, which caught the imagination when it was released in August. Instead of the period-clothed passengers sitting sedately in the earlier version, we have Father Christmas in full regalia, complete with sack of toys! The car itself is given a bright Christmas finish and carries list No. 485.

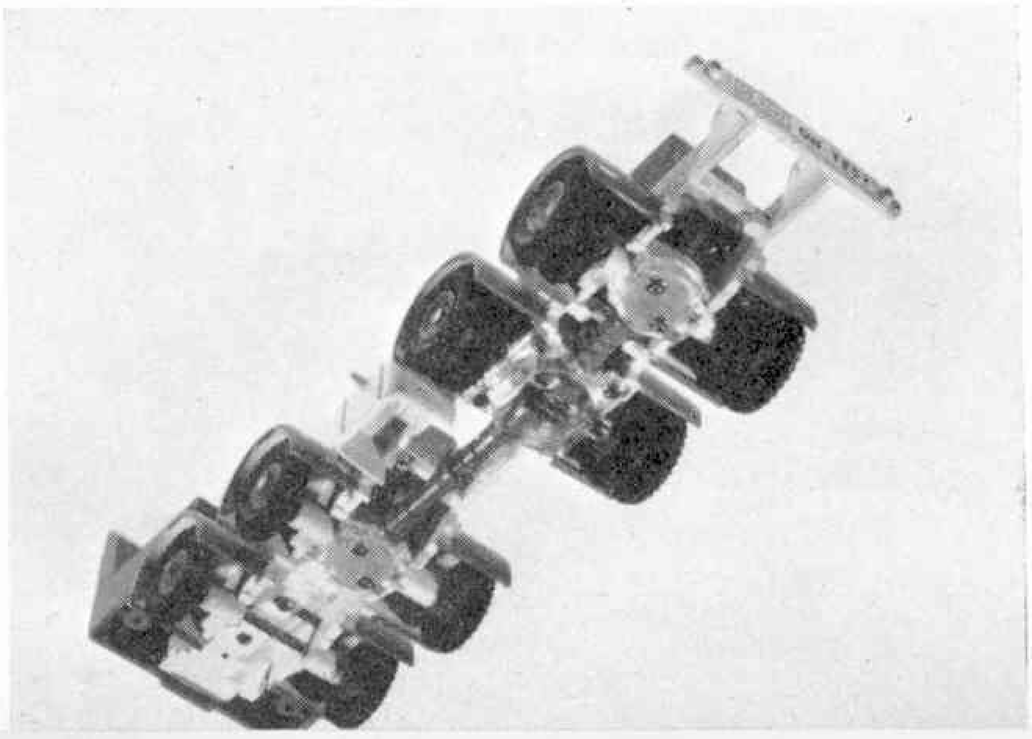
Not surprisingly, its official name is 'Model T Ford with Father Christmas'. I will wager that it will be one of the surprises in many a Christmas stocking and possibly the centrepiece of not a few table decorations.

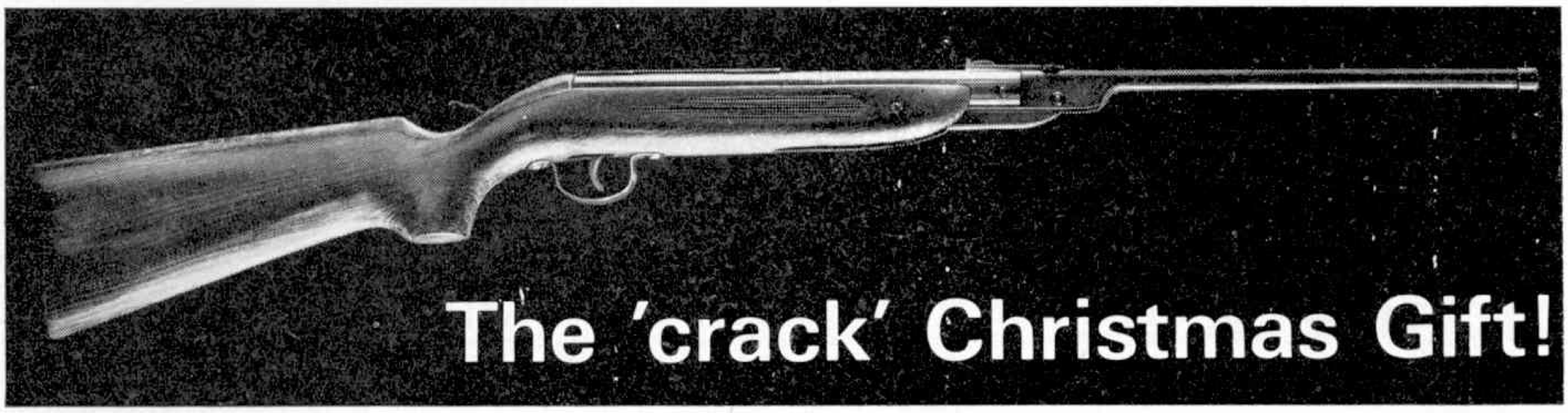
The Dinky Toys Model T Ford with Father Christmas, christmas tree, sack of toys and holly motifs.

Bayko buildings with Bedford TK coal lorry.

Rear view of the popular Dinky Toy Vauxhall Ambulance.

Underside of the eight-wheeled Dinky Toy Leyland Chassis.



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| 3705 | Roadway Half Straight | 3/4 | 1/6 |
| 3706 | Short Straight | 2/2 | 1/6 |
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| 3711 | Half Curve 15" Radius | 2/7 | 1/3 |
| 3712 | Quarter: Curve 15" Rad. | 2/3 | 1/6 |
| 3719 | Curve 17¼" Radius | 3/9 | 2/– |
| 3728 | Hand Point, R.H. | 13/– | 6/6 |
| 3729 | Hand Point, L.H. | 13/– | 6/6 |
| 3731 | Remote Point, R.H. | 24/6 | None |
| 3732 | Remote Point, L.H. | 24/6 | 15/– |
| 3734 | Diamond Crossing, R. | 9/11 | 5/– |
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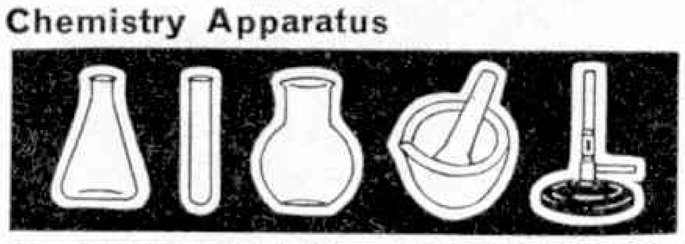

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*Continued on page 55.*

by **F. E. Metcalfe**

# STAMPS

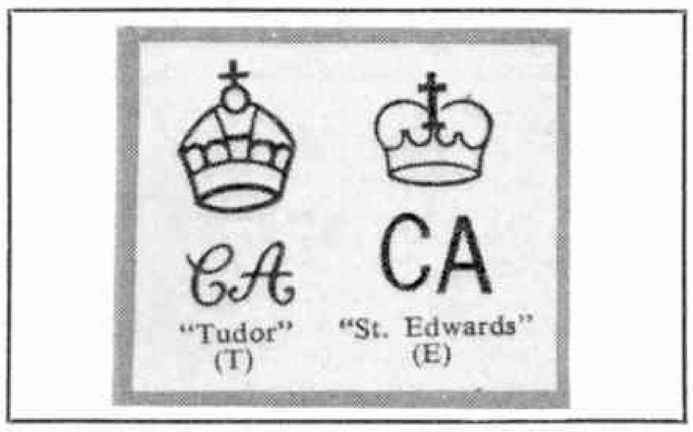
## Watermarks

IT IS now some time since I referred to the three watermarks which have been used for our own British stamps of the present reign. They have resulted in a lot of fun for collectors of G.B., but now the source of such fun is shifting to colonial stamps, and it's high time we took a look at the two watermarks at present in use for these latter issues.

As long ago as 1957, the Crown Agents announced that for new stamps of the colonies which they handle, a paper with a new watermark would be used, but not for new printings of existing stamps.

Perhaps I had better explain that it is the shape of the crown of the watermark which really matters, and not the shape of the letters C.A. (in the case of our stamps, all but the crown has been dropped altogether). I have borrowed from the Commonwealth QEII Catalogue illustrations of the 'T' and 'E' watermarks to show what I mean.

The 'Tudor' crown is associated with kings and the St. Edward Crown with queens, hence the Royal request for the change to be made on 'QEII' stamps. These watermarks are sometimes referred to as Script or Block, referring, of course, to the type of lettering used. But it is, as




stated, the crowns which really matter, so I refer to them as 'T' for Tudor, and 'E' for St. Edward's.

And now, a brief word on the philatelic angle. As the stamps on issue in 1957 have continued in use, in some cases, and the 'T' watermark paper has been used up, all printings are now having to be done on the 'E' watermark paper. This means, of course, first-class varieties. Recently, there have been such changes on various values for Jamaica (already replaced, after a very short run and thus proving scarce), Brunei, British Solomon Islands, Malta, St. Vincent, Mauritius and Sarawak (even a 2c postage due for Seychelles) and, of these, the values for British Solomon Islands and Mauritius will, as happened with Jamaica, have a very short run. As to their prospects, I will refer to this later in these notes.

### Miniature Sheets

I had better explain right away that the sheets I am referring to are those issued by postal administrations and not those by committees which run stamp exhibitions etc., such as the yearly 'Stampex'. The real thing consists of stamps specially made up into small sheets of four or six stamps. Quite often they are imperfect, and make quite a nice display in one's album. For some years now the New Zealand Post Office has issued such sheets along with the big sheets of 'Health' stamps.

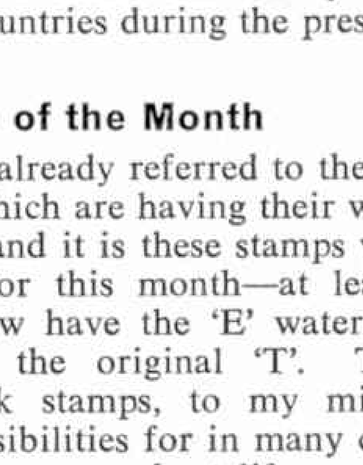
Up to this year they have consisted of four stamps, but rather unwisely, I think, they have increased the size to eight. I say unwisely because, no doubt, the object behind the new increase is to sell more stamps. As a matter of fact, I know more than one collector who in consequence is dropping them altogether. However, in general M.S's are becoming more popular and it is the sheet issued by Cyprus in August of last year, at 5s., now selling at about 50s., which has set off the vogue.

Ghana and Nigeria also issue these sheets and if you buy when they come out, at current rates, I think you will at least get your money back in full if ever you want to sell. The Commonwealth QEII Catalogue gives full details of all the miniature sheets issued by Commonwealth countries during the present reign.

### The Tip of the Month

I have already referred to the Colonial stamps which are having their watermark changed and it is these stamps which are my tip for this month—at least, those which now have the 'E' watermark, instead of the original 'T'. These 'E' watermark stamps, to my mind, have great possibilities for in many cases they will have a very short life.

Try to buy copies with margins which show the watermark clearly, although fortunately, they all generally show up well. Do not reject copies which have no selvedge, otherwise you may miss a stamp which later proves scarce. There is one set which I like particularly, that




of Jamaica. In 1962, the then existing set was overprinted for independence—at least, most of the values were. The watermark then was the 'T' (Tudor) type. Later, a new set was announced and actually appeared in May, but, pending its release, further printings were needed of the then current issue and these were made on the new paper.

Unfortunately, the 'E' stamps already cost a pound a set, at least. This, however, shows the possibilities of other stamps similarly changed. Not that all collectors will go to a pound, of course, but some probably will.

### A Real Comic

I really cannot resist asking the Editor to illustrate a stamp issued by West Germany a few months ago. It forms part of a set of four issued to provide funds (always we poor collectors are asked for such objects; they know how kind-hearted we are) for Humanitarian Relief. But I could not resist buying a set (it cost 5s.) for the other three stamps are just as funny as the one illustrated.

### Catalogues

This is the time of the year when, summer sports over, collectors take down those albums from the shelf. It is also the period when the new catalogues appear. Alas, with so many new stamps coming out, catalogues are not only swelling in size, but also in price. Fortunately they have a large sale, which helps to keep prices down, but Gibbons Part 2 (Europe and Colonies) is now up to 45s., their Part 1 (British Cols.) is 27s. 6d., and the Commonwealth QEII Catalogue (all British Commonwealth of the present reign, including South Africa and Eire) is 10s. 6d. Some collectors try to make do with out-of-date editions, but if you can afford a new one, which deals with the stamps you collect, you will be better off in the long run.

# GAMAGES

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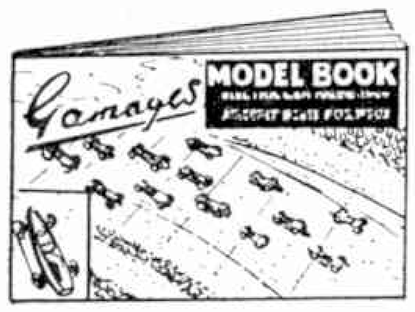


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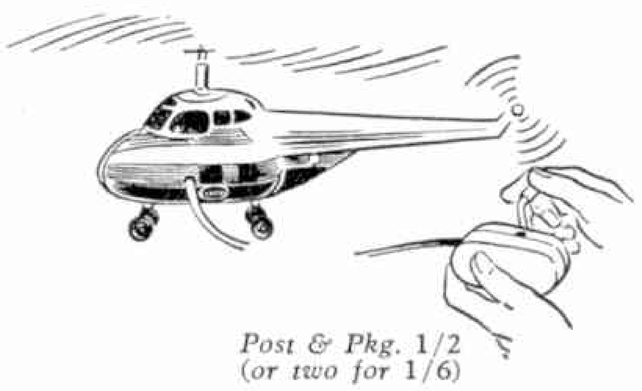

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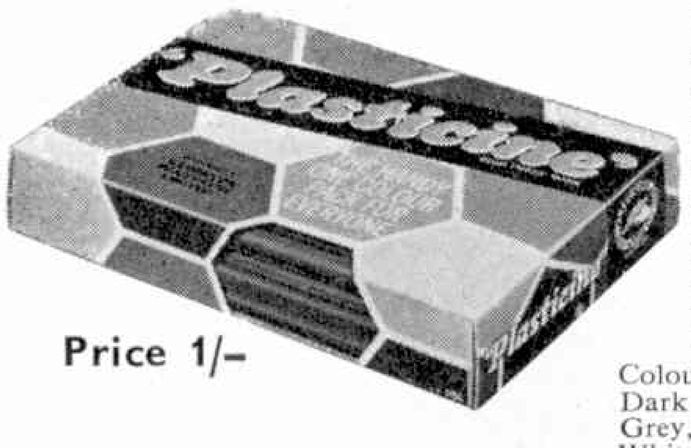


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# AROUND THE SOCIETIES

## East Ham and Dist. M.R.C.

IN NOVEMBER, the branch's activities will be concentrated on the club's stand at the East Ham 'Leisure Time' Exhibition, Town Hall, Barking Road, East Ham from Tuesday, November 3, to Friday, November 6, 10 a.m. to 9 p.m. On the stand, which will have as a background an 8 ft. × 3 ft. photograph of the L.T. & S.R. locomotive 'East Ham', will be a semi-automatic TT layout, size 4 ft. × 3 ft., specially built for this exhibition. In addition, two showcases of models will give the viewer some idea of the members' scope in modelling. The secretary, and other members, will be on hand to answer queries.

Applications for membership are welcomed, either at the exhibition or the clubroom, St. Gabriel's Church Hall, Park Road, London, E.11, on Mondays, or from the Secretary, Mr. G. R. Lloyd, of 32a Goldsmith Road, London, E.10.

## Birmingham Loco. Club

DURING THE late summer, a party of about 45 enthusiasts, including some small parties who had made independent arrangements, travelled in a special train over the National Coal Board's system which radiates from Walkden Yard, Manchester. The special train consisted of Locomotive No. 2 with three hired brake-vans and two open wagons which had been specially sheeted for the occasion. The 0-6-2T Locomotive No. 2 had been through shops recently and had again emerged repainted in North Stafford livery complete with crest, the painting only being completed two days before the trip. The Special covered about 24 miles, which included travelling over most of the board's lines to the various collieries in the area, going as far as Chat Moss, where the N.C.B. line joins the old L.N.W.R. line.

The Birmingham Locomotive Club is greatly indebted to the National Coal Board officials for the efforts and trouble taken to make the visit the success it turned out to be.

## St. John's (N.Z.) M.C.

THIS REPORT covers four meetings held during the late summer months. At the first of these it was suggested that a hobbies section should be formed and chess, table tennis, model trains and photography were suggested. The special Meccano topic was farm equipment and some good models were shown.

At the second meeting, six boys were presented with Meccano Guild certificates and R. McClean was also presented with the model-building shield and money token.

Jobs for the annual C.O.R.S.O. exhibition were allocated at the third meeting when discussions on the exhibition also took place. Marks were given for a number of models produced by the members. At the last of the four meetings referred to some discussion took place on special events for the following term.

## S. Cross Region N.M.R.A.

THE NEW office-bearers for the S.C.R. for the years 1964-5-6 have taken office and are as follows: President, John Wheeler, of 70 Warrigul Road, Turramurra, N.S.W.; Secretary, Ralph Thomas, of 61 Hewitt Avenue, Wahroonga, N.S.W.; Membership Chairman, Frank Maxwell, 11 Dempsey Street, North Hyde, N.S.W.

New members are welcomed and those seeking details should contact Frank Maxwell by letter or telephone (884172 evenings; this is a Sydney suburb telephone number). New members may anticipate not only membership of the International Model Train Association, but may participate in monthly meetings in each division, in a purely local vein. These divisional meetings are held whenever possible at the residence of a member and running rights for members' equipment are available for the afternoon on these layouts. In addition, regular clinics are held at these meetings, on subjects such as couplers, transistor throttles, etc. Newcomers to the hobby receive instruction on every phase of their modelling.

Membership of Southern Cross Region also includes each issue of the Australasian Model Railroad Magazine, which features topical model articles, news of modelling and reviews of products, and which offers free classified advertising to members for, say, used train equipment. This magazine is also available to non-members—say in the U.K.—on a subscription rate of 15s. sterling in Europe and U.K. including postage, Cheques, drafts, etc., should be made payable to S.C.R. Publications, Earlwood, N.S.W.

## Stafford Railway Circle

STAFFORD RAILWAY CIRCLE will be holding their seventh annual Model Railway Exhibition in the Borough Hall, Stafford, on Saturday and Sunday, November 21 and 22.

The exhibition will be open on Saturday from 11 a.m. until 7 p.m. and on Sunday from 1 p.m. until 6 p.m. Attractions will include at least nine working layouts from TT to 0 gauge, film shows, photographic section, static exhibits, and displays by preservation and other societies.

Admission prices will be 2s. for adults and 1s. for schoolchildren. Advance tickets at a reduced rate of 1s. 6d. for adults and 9d. for children (postal applications only), may be obtained from the Hon. Secretary, Mr. A. A. Chatfield, of 6 Jerningham Street, Stafford, on receipt of an s.a.e. and the appropriate remittance.

**CLASSIFIED ADVERTISEMENTS**—Continued from page 52


### Readers Sales

• Large, obsolete "0" gauge clockwork railway, also 40 Dinky Toys. S.A.E. details to: Cashmore, 22 Lampeter Road, Westbury-on-Trym, Bristol.
• Marionettes for sale. Macboozle, Dutch girl, Dr. Beaker, cat, boy, Pinky, as new; 12/- each; a bargain. Dearden, 26 Anson Rd., Swinton, Manchester.
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Prospectus and further information may be obtained from the Principal.

Robert E. Presswood,
Director of Education,
City Hall, Cardiff.

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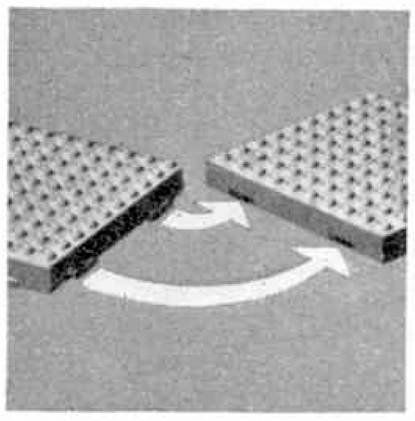

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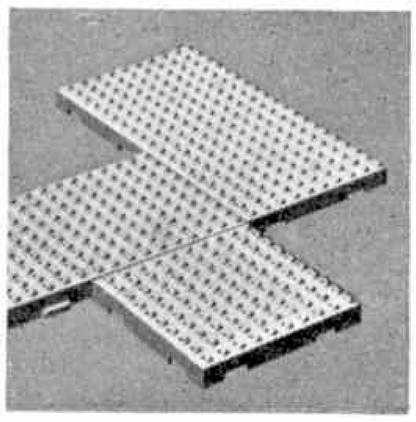
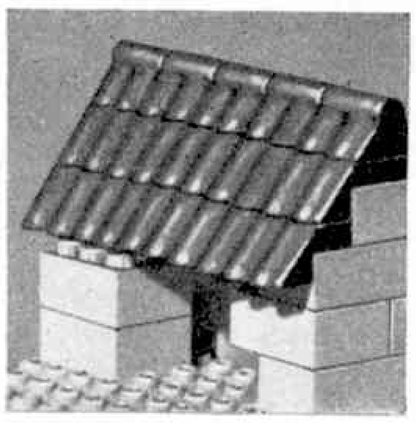
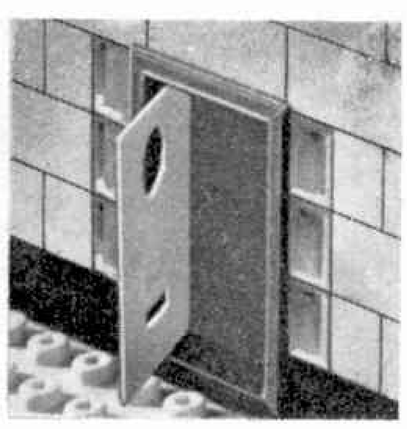




roofs that have tiles and look just like real roofs

windows that open and shut



doors that are hinged to open and close



neat little bay windows with flowers in a bowl



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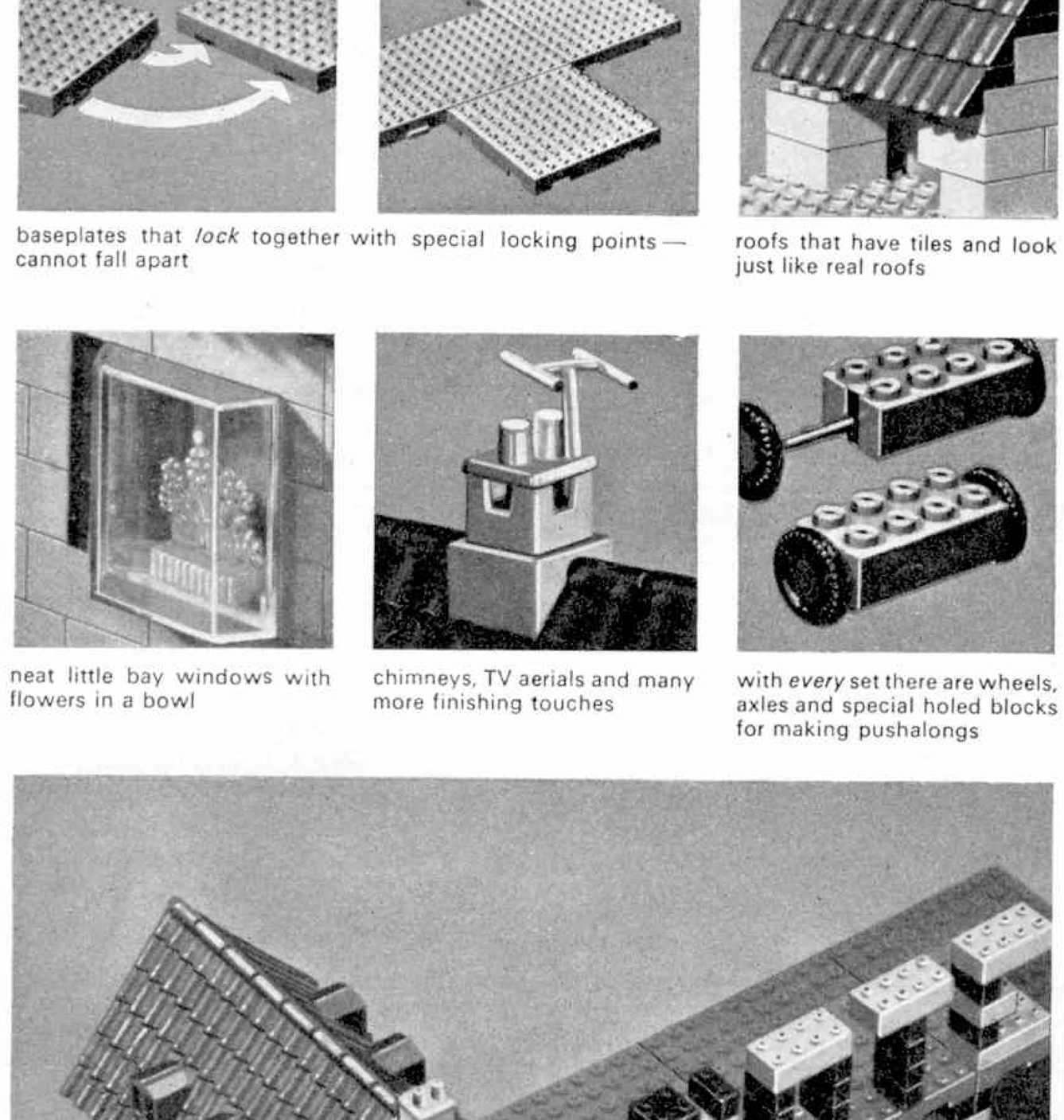

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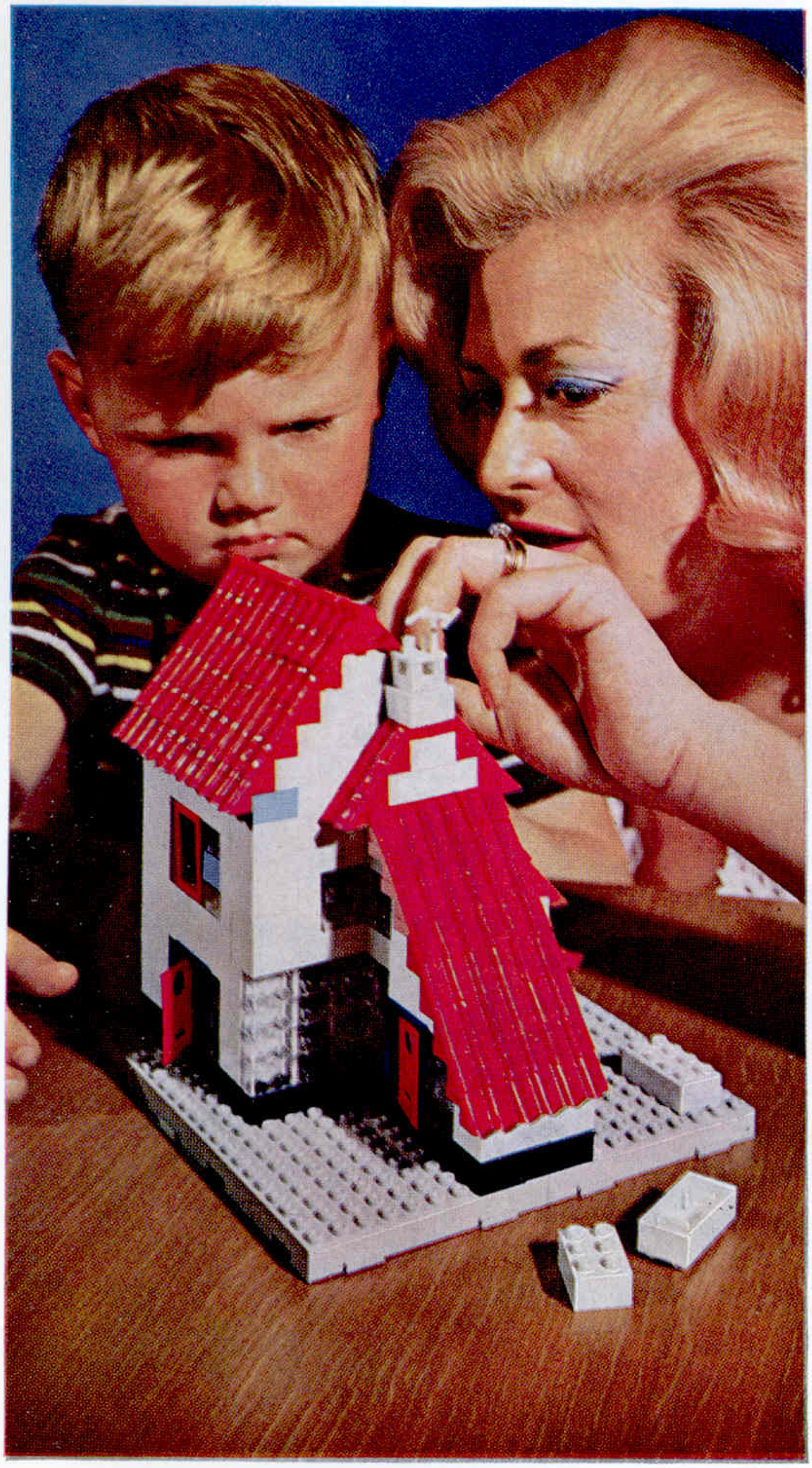

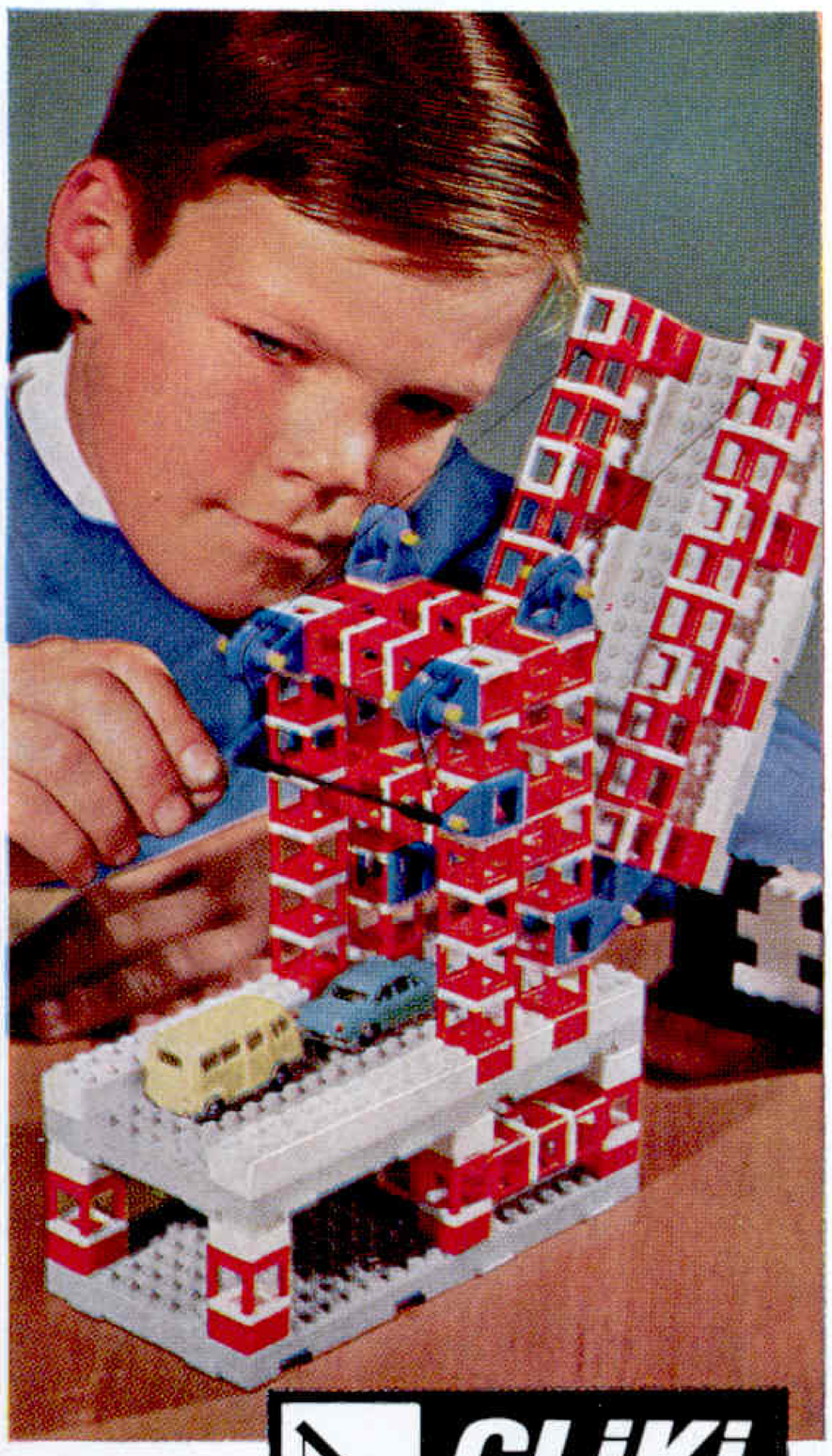

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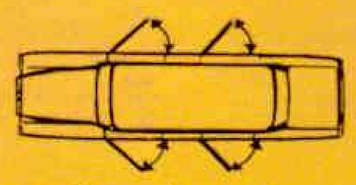

Bonnet, boot and all four doors open

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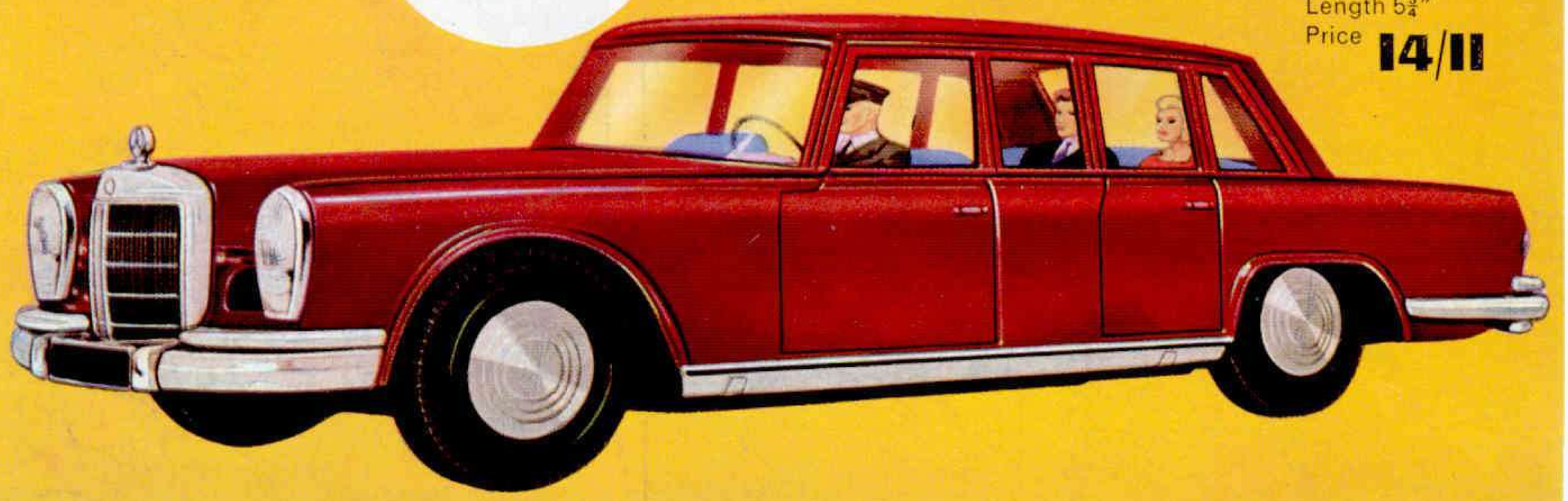

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